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USSR Report

ENERGY

No. 27

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ELECTRIC POWER

ROUNDUP OF VIEWS OF SOVIET ENERGY RESOURCE SUPPLY

Tselinograd FREUNDSCHAFT in German 9 Jul 80 p 3

[Article by Boris Schwan: "The Solution to Tomorrow's Energy Problem"]

> [Text] The resources found on the territory of the Soviet Union comprise almost all kinds of minerals and fuels. Even though access to them is difficult because all deposits (about 90 percent) are situated in the eastern, hitherto little-developed part of the country, various possibilities are open to our economists who are planning energy policy for the future.
>
> The fact that in our country the fuel and power sectors are not in competition with each other enables us to disregard the short-term advantage and use all types of fuels rationally, taking into account long-term requirements. But this does not exclude flexibility in using individual fuels in the country's overall energy balance. What changes can be expected in the future?

Hydroelectric Power

The proportion of energy produced by hydroelectric power plants in the overall world energy balance is small--only 3 percent. In the USSR this proportion is 12 percent. One of the largest hydroelectric power plants was built at Krasnoyarsk (generating 6 million kw); the first unit of the Sayanoshusherskoye power plant (generating 6.4 million kw) is operational. Even though the proportion of hydroelectric power plants in the country's energy balance is declining (1960--17.4 percent, 1970--16.7 percent, 1978--12 percent), they still constitute the key element in the power system because they are irreplaceable during peak consumption periods--hydroelectric power plants can be shut off and turned on at a moment's notice, when necessary. In recent years hydroelectric power plants have been developed predominantly in the eastern regions of the country, in Central Asia and Transcaucasia.

Coal

The USSR has vast deposits of this fuel. Since 1958 its coal production (1979--719 million tons) was highest in the world. Specialists believe that the opening of the rich coal deposits east of the Ural Mountains (Ekibastus, the Kansk coal basin--Atshinsk and others) will permit the implementation of many Soviet economic development programs. Powerful thermal power plants will be erected at sites where coal can be strip-mined easily and cheaply. Their power will reach consumers by unique high-voltage power lines (carrying 1,150 kV alternating current and 1,500 kV direct current).

Scientists believe that coal will also increase in importance as a source of liquid fuels. At the Moscow Institute for Mineral Fuels a fuel of this type is being produced from coal and a pilot plant with 13,000 tons of annual capacity is under construction.

Gas

The Soviet Union leads other countries in the annual rate of increase of gas production. In 1950 the proportion of gas in the Soviet energy balance was 2.3 percent, in 1970 it was 19 percent and in 1978 already 24.6 percent. The rapid jump which occurred in the middle of the sixties propelled the USSR to second place after the United States in gas production and is due to the discovery and exploitation of the very rich deposits in East Siberia. Currently every third thermal power plant in our country burns gas and 90 percent of chemical fertilizers are produced from gas. But its principal use is in home heating and in satisfying social needs. Today 182 million inhabitants use liquified and natural gas.

Crude Oil

The USSR is the world's leading producer of crude oil (1979--586 million tons including gas condensates). The biggest increase comes from West Siberia supplies. According to specialists the potential of these fields has not yet peaked, even though here the production structure has changed--smaller but more numerous deposits are currently beginning to be exploited which, of course, makes for an increase in drilling and construction costs. The fast payback of capital invested in West Siberia oil fields pays for the increased cost. In the meantime improved crude oil production procedures from oil-bearing strata are being developed. Tatar oil shale has for the first time been tapped by drilling.

At the end of last year crude oil was tapped in West Siberia from deep deposits as a first step in opening up oil deposits hidden in old sediments.

In spite of increased production, however, specialists predict that the role of crude oil and natural gas as an energy source will decline and it would be unreasonable to squander the valuable and frequently irreplaceable chemical raw material by using it as fuel.

Uranium

In 1954 the USSR built the world's first nuclear power plant. But for a long time the development of nuclear power has stagnated--before 1970 only 1,500 MW nuclear power were being generated. This delay was due to these causes: for one thing, for a time the fuel requirements of the European regions were fully covered from traditional sources; then also, optimal technical solutions were being sought to reduce power production costs of nuclear power plants. Of special importance was the careful testing of the multiple safety systems in nuclear power plants, which required the observation of the ecological environment in their vicinity over several years--because soil, plants and surface deposits can accumulate radioactivity should it seep through the concrete buildings of the power plants. Research has demonstrated that our existing nuclear power plants are highly reliable. In 1980 the proportion of nuclear power plant capacity will be 10 percent of overall generating capacity in the European part of the country. In the future the increase in generating capacity in this region is expected to be supplied primarily by nuclear power plants.

"Eternal" and New Sources of Energy

Scientists foresee that solar energy will play a steadily increasing role in the energy balance in southern Soviet republics. Solar power is currently actively used for space heating and desalination of aquifer waters. Polar regions can, according to specialists, become a source of wind power. For several years now in our country the scientific producer association Cyclon has been developing and manufacturing on a large scale wind generators of varying capacity serving different purposes. Resolutions have been adopted designed to improve energy utilization of thermal waters--the erection of a geothermal power plant in Dagestan of 300 to 500 MW capacity is being planned.

But the exploitation of eternal sources of power does not exclude the search for new ones. For the distant future the in many ways unpredictable magnetic-hydrodynamic energy blocs (to be fueled by brown coal from the Kansk-Atshinsk basin) are being developed and work is actively proceeding on controlled thermonuclear fusion. Last October the "Angara 5" plant of the 48-part gigantic thermonuclear fusion complex went into operation. Scientists hope it will demonstrate the feasibility of obtaining a stable yield of power. The USSR has also developed plans for a nuclear reactor producing not power but hydrogen, which in the scientists' opinion is candidate No 1 for the role of ideal fuel (its combustion produces water from which hydrogen can again be produced).

Expectations for the future include the comprehensive utilization of different sources of energy, an increase in capacities of the fuel and energy complex and improvement of its structure. Great weight is placed on enlarging fuel production and developing nuclear and hydroelectric power sources. The importance of gas in the energy balance is on the rise. At present a comprehensive scientific energy program for the whole country based on economic realities is in preparation designed to insure the all-encompassing development of energy for the country's national economy.

8664
CSO: 1826

HISTORY OF KAZAKHSTAN'S ELECTRIC-POWER SYSTEM REVIEWED

Alma-Ata KAZAKHSTANSKAYA PRAVDA in Russian 16 Jul 80 pp 1-2

[Article by T. Baturov, Kazakh SSR Minister of Power and Electrification: "The Might of the Republic's Electric Power"]

> [Text] On the 60th anniversary of the Kazakh SSR and the Communist Party of Kazakhstan.

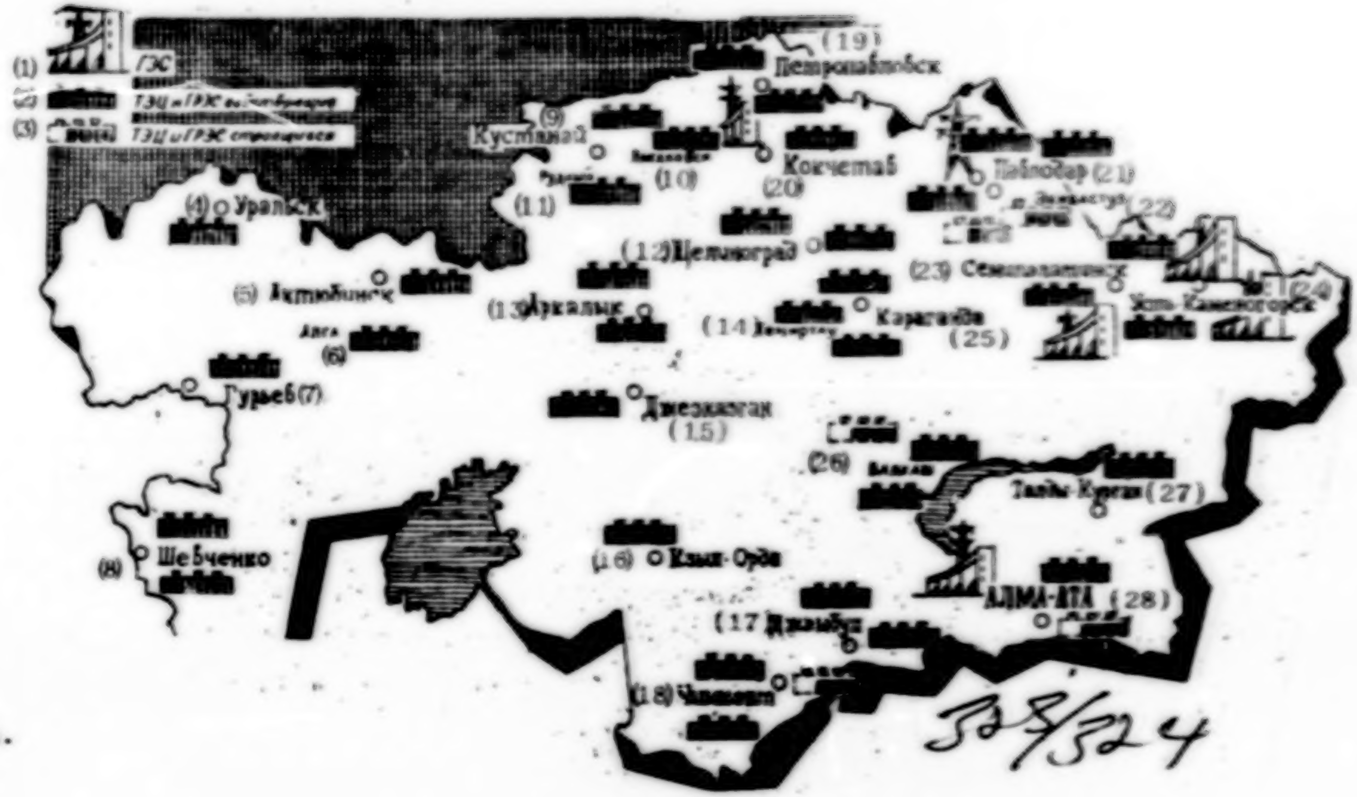
There are in the life of every construction project both major and minor events that are especially dear to people. So these events make up a unique chronicle written by the labor and heart of the creators. One page of such a chronicle was begun relatively recently in the steppe at Ekibastuz. Here, on 18 September 1977, Nikolay Edokh's brigade from Energomontazh [Trust for the Erection of Electric-Power Facilities] erected the first column of the future building of Ekibastuzskaya GRES-1.

And on the eve of the 110th anniversary of V. I. Lenin's date of birth, the station's first power unit, of 500,000-kw capacity, was put under an industrial load. Seven more such units will be installed here. They will bring the total strength of the station up to 4 million kw.

I wanted to begin our current discussion with precisely these facts for completely understandable reasons. For it is most remarkable that all this concerns Kazakhstan, a district where there was practically no electricity prior to the Great October. Right now, when the whole Soviet people is en route to the 26th CPSU Congress with unprecedented political and labor enthusiasm, when soon we shall observe the 60th anniversary of the republic and the Communist Party of Kazakhstan, there is meaning in taking a look back, to recall once more what our electric-power region began with.

Here is what we find from the official historical information. Prior to the revolution there were only 2,500 kw of electric-power capacity in the vast expanse of the region, which is more than 2.7 million km^2 in area and which generated less than 1.3 million kw-hr: this was 0.07 percent of all of Russia's generation of electric power. In Semipalatinskaya guberniya, which was the best equipped in that day, only two cities operated power plants, which had a total "strength" of 54 kw. One cannot compare these

[Kazakh SSR]



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Key:

1. GES.
2. TETs and GRES (operating).
3. TETs and GRES (under construction).
4. Ural'sk.
5. Aktyubinsk.
6. Alga.
7. Gur'yev.
8. Shevchenko.
9. Kustanay.
10. Lisakovsk.
11. Rudnyy.
12. Tselinograd.
13. Arkalyk.
14. Temirtau.
15. Dzhezkazgan.
16. Kzyl-Orda.
17. Dzhambul.
18. Chimkent.
19. Petropavlovsk.
20. Kokchetav.
21. Pavlodar.
22. Ekibastuz.
23. Semipalatinsk.
24. Ust'-Kamenogorsk.
25. Karaganda.
26. Balkhash.
27. Taldy-Kurgan.
28. Alma-Ata.

meager kilowatts with today's millions of kilowatts of output without a smile. But one must also not forget that the road to them was difficult and complicated.

From the first days of Soviet power, the Communist Party took stock of all natural wealth, including power resources: it was necessary to use them as completely as possible for the republic's economic progress. Lenin's plan for Russia's electrification (GOELRO [State Commission for the Electrification of Russia]), the 60th anniversary of which will be observed this year, played a most important role here. It can be said with full substantiation that, even for Kazakhstan, this plan was that turning point from which our current power system came. Even then, in 1920, Vladimir Il'ich Lenin paid attention to the possibility of using the Ul'ba and Gromotukha rivers in Vostochno-Kazakhstanskaya Oblast for creating hydroelectric power plants. And the GOELRO plan called for the construction of these stations and also of stations in Alma-Atinskaya Oblast.

Fifty-four years ago the republic's first steam turbine, of 200 kw capacity, was started up at the Leninogorskaya TsES. In 1928 the first hydroelectric-power station on the Gromotukha River--the Khariuzovskaya--began to operate. Several years ago I managed to visit it. I experienced an unusual feeling.

...Six kilometers from Leninogorsk, in a small plain, stands the inconspicuous two-story building of our Khariuzovskaya: you pass it and you pay no attention to it. The station is operating well. Its four units--three Swedish and one domestic, which bears the brand of the Leningrad Machinery Plant and serial No 35--continue to generate electricity. True, the machines themselves are not large. And the machine room is unusually crowded. I looked at all this with a sort of aching sadness, but also with pride. And I was deeply grateful to Petr Mikhaylovich Pozdnyakov--the on-duty operator, who had been working at the station almost from the first days of its startup, and who said then: "It is not a big facility. But indeed it is some kind of a monument!"

I will run ahead a little bit. After that far-off 1928, there were to be the Ul'binskaya and Tishinskaya GES's, the Alma-Atinskaya cascade, the Ust'-Kamenogorskaya, Bukhtarminskaya and Kapchagayskaya power stations and the start of construction the year before last of the Shul'binskaya GES, of 1.35 million kw capacity, and a mental glance ahead reveals a time when the powerful Irtysh will be spanned over its entire extent by the dams of 11 huge electric-power stations--this plan has already been created. But the Khariuzovskaya GES was the first swallow of the republic's hydraulic-engineering construction, and its creators will remain forever in our grateful memory.

At the end of the first and second five-year plans, steam-turbine electric-power stations whose capacities were measured not in hundreds but in thousands of kilowatts were rising up in the republic. These were the Karagandinskaya TsES, the TsES of the Chimkent Lead Plant, the TETs's of the Semipalatinsk Meat-Canning Combine and the Aktyubinsk Chemical Combine and the Karatauskaya and Alma-Atinskaya TETs's....In prewar 1940 the total capacity of Kazakhstan's electric-power stations reached 224,000 kw, and 0.63 billion kw-hr of electricity were generated. In a short time an appreciable leap had been made in developing electric power, and by the start of the Great Patriotic War the republic already had a base that was adequate for mobilizing all its potential and for making its contribution to victory over the enemy. But the strengthening of this base did not cease for a minute, even during the difficult war period. Each year, twice as much electric-power capacity was put into operation as in the year before the war. As a result, in the year of victory the republic now had 383,000 kw, and the generation of electricity had passed a billion kilowatt-hours.

The postwar period prior to 1960 became a stage of further ahead-of-schedule development of the electric power base. This was the time of the unforgettable virgin-lands feat, vigorous industrial growth, and wide promotion of capital construction in literally all corners of the republic. In this connection, the power engineers were entrusted with very important tasks. They carried them out with honor. By 1960 the foundation of the power base was 3.6 million kw. The republic's power-engineering activity had grown so much that it demanded daily, intensified attention. By this I mean the necessity for branch-of-industry methods for managing it. The creation of the Kazakh SSR Ministry of Power and Electrification in 1962 was a most important factor that provided for further acceleration of technical progress.

Now, after about 18 years, the republic's electric-power capacity has almost quadrupled. And it was not just a matter of constantly increasing the number of power plants (during this period more than 20 new ones appeared) but of concentrating further progress on sharply changing their qualitative characteristics. They began to be built on a most modern basis, and the potential for equipping them with more powerful hydraulic and steam turbines appeared. For example, the Yermakovskaya GRES--the largest thermal power station in the republic and in the country's east--operates 8 units of 300 mw each, for a total capacity of 2.4 million mw. For comparison let us recall that the total power of the 30 power stations called for by the GOELRO plan did not exceed 1.75 million kw.

It is characteristic that the development of Kazakhstan's power-engineering has been steadily accompanied by a growth in centralization of the supply of electricity. But while this process was being impeded prior to the 1960's by a lack of construction of power grids, this lack now has to a great extent been done away with. The length of electric-power transmission lines of all voltages has reached almost 350,000 km. All this has enabled entire electric-power systems to be established and developed. The Tselinograd, Kustanay, South Kazakhstan, West Kazakhstan, Pavlodar and Gur'yev systems have been added to the previously established Alma-Ata, Karaganda and Altay systems. They have been connected not only to each other but also to the Russian Federation, Kirgizia and Uzbekistan systems. Formation of an associated electric-power system (OES) on the basis of the Karaganda, Pavlodar, Altay, Kustanay and Tselinograd systems has been completed. In the republic there is a trans-Kazakhstan latitudinal arterial more than 1,600 km long that has enabled operation of the West Siberian OES to be connected in parallel with the Unified Power System of the country's European portion, through the North Kazakhstan OES.

Last year electric-power generation in Kazakhstan reached almost 60 billion kw-hr. This was much more than all the Soviet Union's power plants yielded in 1940. The rate of growth in our production of electricity surpasses the average for the country. In this production, Kazakhstan takes third place in the Union, following the RSFSR and the Ukraine, and, in level of consumption of electricity per inhabitant, it has surpassed all the Asiatic countries, Africa and America (except for the USA and Canada), as well as many European countries. As has already been noted, our republic has been transformed from just a consumer into a supplier of power to other industrial regions of the country.

However, time moves on. However high the goals we may have reached today, tomorrow these will be yesterday's. The future is seen in such giants as the ETEK--Ekibastuz Fuel and Power Complex, whose creation the country and the republic are undertaking in accordance with a decision of the 25th CPSU Congress. The massiveness of scale of the operations and the All-Union stature of the economic and social tasks that are being resolved at the ETEK have put it in a class with such leading construction projects of the country as KamAZ [Kama Motor-Vehicle Plant], the BAM [Baykal-Amur Mainline] and Atommash. The total number of stations at the complex that are similar to GRES-1, with the construction of which this discussion commenced, will be five. This means 20 million kw! Not so very long ago it would have been possible only to dream about this. But today this dream is acquiring completely real and visible outlines. The first "500,000-er" is operating at GRES-1, the second is being erected, and by the end of this year it also should be hooked up to useful work. The builders have arrived at the site of GRES-2. Surveys are being conducted locally for the future Yugo-Zapadnaya GRES, which is being sited on the shore of Lake Balkhash. The builders incorporated in the job the unique superhigh potential 1,500-kV Ekibastuz-Central Economic Region DC power line and the 1,150-kV Ekibastuz-Kustanay-Ural AC power line, and these will eventually "receive" ETEK's electricity....

District heating has become a most important component of Kazakhstan's power engineering. The meeting of national-economic, municipal and the population's domestic requirements for heat, based upon the combined generation of thermal and electrical energy, began intensively at the start of the 1960's. Suffice it to say that the release of heat, as we say, has increased sixfold since 1962. This has made it possible to close more than one and a half thousand small boilerhouses, to release almost 10,000 servicing personnel, and to make the air basins of the cities healthier. The total length of heating mains is now approaching 1,000 km.

Modern power engineering is a complicated operation, and it is equipped with varied machinery and with a high degree of automation of the work.

It requires very high qualification of workers. Therefore, we are paying major attention to personnel training. Four of the republic's institutions of higher education and five large tekhnikums are training middle-team engineers and specialists for the industry. The role of scientific research and modern design in the overall development of power engineering has been intensified. Twenty years ago there was only one design organization--Kazgiprovodelektro, which was occupied with small rural hydroelectric power stations, diesel power plants and local power grids. Now the Kazakh Scientific-Research Institute for Power Engineering has been established, and large divisions of the country's leading power-engineering design institutes have been organized.

The Kazakh SSR Minenergo [Ministry of Power and Electrification] system includes 147 enterprises, organizations and institutions, including 37 fixed thermal and 28 hydroelectric power stations. Total worker manning is almost 76,000. As we see, it is an enormous force. We have remarkable people. Without picking out any certain one specially, I will say only that thousands of advanced workers have already carried out personal five-year plan tasks. All the industry's workers widely promote socialist competition for a worthy greetings for the 26th CPSU Congress and the 60th anniversary of the republic and of the Communist Party of Kazakhstan. The bases of this competition are the decisions of the November 1979 party plenum, and the recommendations given it by CPSU Central Committee General Secretary and Chairman of the USSR Supreme Soviet Presidium Comrade L. I. Brezhnev. Managers, party, trade-union and Komsomol organizations, and the collectives of all the industry's enterprises are applying efforts to supply the national economy's needs for energy fully and uninterruptedly, so that production proper may be more economical and effective.

Thanks to the wise policy of the party and the government, the constant assistance of all the fraternal republics, the efforts of the republic's party, soviet and economic organs, and the selfless work of Kazakhstan's laboring collectives, a powerful energy base has been established in Kazakhstan, enabling the most diverse economic tasks to be solved smoothly. In this connection, it is pertinent to recall that almost 60 years ago the well-known English science-fiction writer, Herbert Wells, wrote a book, "Russia in an Instant." In it he said, in particular:

"Lenin, although he denied, as a loyal Marxist, all 'utopias,' in the final analysis has himself been carried away by an electrical utopia. With all his might he is advocating a plan to organize in Russia gigantic electric-power plants that are to serve whole oblasts with light, water and motive force. This type of electrification already exists in Holland, it has been mentioned in England, and it is extremely possible that in these densely populated and industrially developed nations it will be crowned with success and will prove to be a useful and economic affair. But to conceive of its use in Russia is possible only by the use of very great imagination. I personally cannot imagine such a thing, but this little man in the Kremlin apparently can. He sees the railroads, which are suffering a decline, being revived by electrical railroads, he sees the whole country being opened up by a network of such railroads and new communist industry being developed. The Kremlin dreamer spoke with such fire that, as I listened, I almost believed in this possibility."

The world-renowned science-fiction writer "almost" believed. The Soviet people believed without any reservations. It believed and it did what seemed to some to be impossible. This is an indisputable advantage of a society that is building communism, this is the strength of Lenin's ideas, which are confirmed by life.

11409
CSO: 1822

MEASURES FOR SAVING FUEL, POWER

Alma-Ata KAZAKHSTANSKAYA PRAVDA in Russian 27 May 80 p 3

[Article: "Conserve Fuel and Energy Resources"]

[Text] The Council of Ministers of the Kazakh SSR, in an adopted decree entitled "Additional Measures for Saving Fuel and Power Resources," noted that the ministries and departments of the republic and the oblast executive committees are carrying out measures directed to the economical expenditure of thermal and electric power and fuel and reducing their specific consumption in goods production. However, individual ministries, departments and executive committees of local soviets have not yet adopted proper measures for a more rational use of fuel and power resources.

At a number of enterprises there is no assurance that the set goals will be met with respect to such economies. Inadequate use is being made of secondary energy resources, particularly in the metallurgical and chemical industries. Work on accounting for the expenditure of petroleum products is being poorly attended to; cases of mismanagement of their storage are allowed; their use for purposes other than intended is being permitted. There are a particularly great number of such enterprises in the ministries of the meat and milk industry, construction of heavy industry enterprises, agriculture, highways, local industry, nonferrous metallurgy and construction materials industry of the Kazakh SSR.

The Council of Ministers of the Kazakh SSR has called upon the oblast executive committees, Alma-Ata city executive committee and the ministries and departments of the Kazakh SSR to take additional measures for the most rigorous adherence to the established plans and limits for the consumption of electric and thermal energy and gas by each enterprise and organization; they must ensure universal economy of these resources and must forestall irrational consumption. There is a need for taking measures for reducing the consumption of thermal energy due to the more extensive use of secondary power resources forming in the production process, there is a need for studying the experience of the Ust'-Kamenogorskiy Lead and Zinc Combine in the cooling of metallurgical apparatus by evaporation and the installation of units for utilizing the heat of outgoing gases, and also a need to examine the problem of carrying out similar measures in subdepartmental plants. There is a need for broader development of socialist competition for care in the expenditure of all energy resources, for the meeting and "overmeeting" of the set goals with respect to output, production and transport of fuel, creating an impatient attitude toward the facts of mismanagement in this important undertaking.

5303
CSO: 1822

FUELS

DIRECTOR OF TOREZANTRATSIT ON DONBASS MINES

Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 18 Mar 80 p 2

[Article by V. Mal[illegible], General Director of "Torezantratsit" Industrial Association: "The Stars of the Mines"]

[Text] The "Udarnik" mining administration is the oldest enterprise in the Donbass. It has rich labor traditions. As early as the First Five-Year Plan the "Udarnik" miners asked the mining engineers of the country to point out successes in competition for the red star over the piledriver of the mine. This tradition continues today. Wherever a labor victory is achieved the red star shines. The symbol of mining glory still shines over the "Udarnik" piledriver and has for many years. In 1939 the collective of the mine was awarded the Order of Lenin. The miners were among the first in the Donbass to win this great honor.

However, the lifetime of each mine is limited by its reserve of fuel. After many years of operation the better coal seams of the "Udarnik" have been depleted, and back in the 1960's the question was asked: what to do? A real threat of closing the enterprise existed. Most experts were inclined to do that.

They started to look for an escape from the developing situation. "Udarnik" specialists were united with the supervisors of the association. The Party gorkom of Snezhnoye decided to extend the service life of the mine. Searches were conducted in many directions. The discussions proceeded as follows: there are no balance coal reserves left -- we will have to go after the overbalance reserves.

Seams containing 8.5 million tons of coal were discovered under the floor of the closed Kiselev mine during final prospecting. A vertical shaft was sunk to a depth of 632 meters and six very thin unconditioned seams were exposed. Then it was decided to go after a series of faults, where there were reserves of coal on so-called unaccounted floors. Prospecting was done by the fourth western haulage drift for a distance of 2.5 km and the enterprise was connected to a shaft of the Lutugin mine by a cross cut.

I will not discuss all the problems connected with prospecting operations. Suffice it to say that as a result we acquired a complete picture about the seam in the unaccounted section. It did not impress us. Its structure was extremely complex. The seam turned out to be, so to speak, a layer cake. The coal, in fact, was interrupted by rock. However, we had no choice. All reserves were placed on strict accounting. We found the best working system, the pole system, which enabled us to cut costs in half and speed up preparation of the mine fields for exploitation.

As is known, we did not have any special mining technology for working such extremely thin and complex strata, and practically none existed anyway. Our mining science here, in my view, was extremely outmoded. We had to use unknown techniques and, as they say, feel our way along. We tried nearly every kind of existing machinery until we settled on the "KMK-97" complex. It turned out to be the best for "Udarnik" conditions.

This machinery was first adopted in the second section, supervised by V. Kotsyur. The digging teams of F. Dzyamko, N. Zanin and N. Vernyuk proved that the "KMK-97" complex is perfectly suited for operating in the mine. The complex marked the beginning, strictly speaking, of the mechanization of coal mining in the cutting faces of the thin seams of "Udarnik." Thirty percent of the total yield in 1975 was produced by the complexes, compared with 90% today. The load on the longwall has increased sharply. Five-seven years ago it was only 300-400 tons, but now it is 700-800 tons of clean fuel. In the first section, supervised by V. Yashchenko, the mean daily load reached nearly 900 tons in January of this year. Not many mining teams in the country have achieved such success on thin seams.

During the 4 years of the 10th Five-Year Plan the staff of the mine administration produced 3.140 million tons of coal, more than 335,000 tons of which are in excess of the quota. Labor productivity per worker exceeds the quota by 2.7 tons, and the cost of each ton recovered has been reduced by 60 kopeks. A careful attitude to materials and efficient utilization of labor resources alone enabled the "Udarnik" people to save about 2 million rubles.

Here is another noteworthy fact. When the shaft went into operation its projected capacity was 660,000 tons of anthracite per year, and today, 10 years later, after depleting all of their so-called "bread" seams, the miners are producing 832,000 tons. In January they produced 2.632 tons per day, compared with a quota of 2.164 tons.

Fortune also smiled upon the "Chervona zirka" shaft. This enterprise also has a prerevolutionary history. Its people have written many brilliant pages in the history of the Donbass coal industry.

The years went by, the veterans retired, they were replaced by young people, and the tradition lives on. In January of this year the shaft was the first in the coal mining sector to fulfill the assignment of the 10th Five-Year Plan. Consumers received nearly 300,000 tons of high-grade anthracite above the five-year quota.

It is important to emphasize that this success was achieved under the same conditions as at "Udarnik."

The use of new technology for working thin strata, improvement of the professional level of the miners and specialists made it possible to increase the load on the cutting face, elevate labor productivity and reduce the cost of the produced fuel. Since the beginning of the five-year plan the staff has saved 1.8 million rubles.

The "Udarnik" mine administration and the "Chervona zirka" mine are the most characteristic enterprises of our region, which is one of the oldest in the country. More than half the mines here were constructed in the 1930's. In a half century of operation they have descended to great depths and have already depleted the better strata.

The emerging structure of fuel reserves posed the specialists of the association and mines with difficult and diametrically opposed problems. One was to extend the lifetime of the enterprises by exploiting overbalance reserves, and the other was to close many enterprises and develop new sectors of the industry in the region. After careful analysis of all the pros and cons the Torez and Snezhnoye gorkoms of the Communist Party of the Ukraine and specialists of the association and mines arrived at the conclusion that it was essential to preserve the mining fund and, in parallel with that, to increase capital investments in the construction of new coal mining enterprises. This decision was justified by the growing demand of the country for fuel, by the economic approach to the utilization of natural resources and by the need to conserve the coal region with the richest labor traditions.

It can be said today that the problem was solved successfully. By virtue of the involvement of overbalance fuel reserves in development the "Udarnik" mine administration, shafts No. 3-bis "Miusskaya," "Removskaya," "Chervona zirka" and others got their second wind, forgive the expression. Their lifetime was extended by 20-50 years.

Along with this a new seam development system was adopted -- the use of upgrade poles, which makes it possible to improve working conditions and safety for the miners, elevate labor productivity and reduce labor and material costs. At the same "Udarnik" mine administration the costs of preparing new horizons have been cut by 5 million rubles in the last 10 years while coal production has increased, and the specific sinking of preparatory shafts per 1,000 tons of production has decreased by more than 19%. Thanks to the adoption of the new system in five longwalls of the mine administration coal is being excavated without preparation of the floors. This has made it possible to release 20 miners from backbreaking and unproductive labor.

Today 12 shafts have been converted completely or partly to the new system.

High-quality engineering preparation was an important prerequisite for the discovery of creative capabilities of the staffs of the enterprises and provided a lot of room for conducting competition for the early fulfillment of the assignments of the 10th Five-Year Plan. The fight for work without malingerers has begun. It is important here that the collectives not lock themselves up, so to speak, in their own shells, but quickly utilize the best experience of each other. This is the secret of common success.

One need not go far for examples. At this "Udarnik" mine administration the miners of the sixth section gave great assistance to the collectives competing with them. Section chief G. Nechipurenko, combine machinist N. Golyshev and a group of mine workers helped their neighbors master mining technology for 6 months and to overcome organizational, technical and technological difficulties. Today the third section works on the same level with the sixth. For their successes in competition and for reinforcing labor cooperation both collectives earned prizes.

It is interesting to note another fact. Usually, when results of competition are being added up, only those who won and lost are mentioned. Some are praised and others are abused. But the people in the middle get left out. Meanwhile this group of workers, so to speak, create the climate at an enterprise. From that climate the ranks of both the leaders and the laggers can be supplemented. Our enterprise supervisors and social organizations constantly keep this category of workers in the field of view. For this purpose the results of work in each brigade are being graded at the mines. Here all are rewarded in accordance with merit. The titles "Professional Superior" and "Superior Young Worker" are conferred for good work.

A concrete approach to the work of each collective and miner enabled us to better utilize internal reserves. Suffice it to say that the assignment of 4 years of the five-year plan was fulfilled by the entire association on 30 November. A million tons of anthracite were produced in excess of the quota. Nearly 3 million rubles were saved as a result of cost reduction.

The labor productivity quota and other technical-economic indices were overfulfilled. For success in All-Union and republic competition in 1979 the collectives of the shafts and "Chervona zirka," No. 3-bis "Miusskaya," "Udarnik" and "Volynskaya" mine administrations were awarded rotating Red Banners.

It was with great joy that the miners heard the news that the association had won the rotating Red Banner of the CPSU Central Committee, USSR Council of Ministers, VTsSPS [All-Union Central Trade-Union Council] and VLKSM

[All-Union Lenin Communist Youth League] Central Committee along with notification of that fact on the All-Union Bulletin Board of Honor of VDNKh [Exhibition of Achievements of the National Economy of the USSR]. Many workers deserve credit for such a high mining labor grade. Today the collectives of the coal enterprises are doing everything to justify this high honor. They have already delivered to consumers this year about 150,000 tons of anthracite in excess of the quota. The stars of the mines will not grow dim above the piledrivers.

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FUELS

INTENSIVE DEVELOPMENT OF NEW PETROLEUM DEPOSITS ON BUZACHI PENINSULA

Alma-Ata KAZAKHSTANSKAYA PRAVDA in Russian 8 Jul 80 p 3

[Article by V. Yefremov, deputy chief, Main Administration for Transport and Supply of Petroleum and Petroleum Products, USSR Ministry of the Petroleum Industry]

[Text] New petroleum deposits on the Buzachi peninsula are being intensively developed and a promising raw materials base of the country is being created in Western Kazakhstan.

It was only in 1975 that petroleum was discovered by geological surveyors in the peninsula, but already by 1978-1979 the petroleum reserves had been confirmed and work had been started on operation of the Buzachi Kalamkas and Karazhanbas deposits. The Kalamkas-Karazhanbas-Shevchenko oil pipeline, with a length of 280 kilometers, was laid ahead of schedule. The state commission accepted it in operation with the rating "excellent" and the valuable raw material began to be pumped at once. Buzachi oil went to the oil refineries.

Such a rapid organization and introduction into operation of deposits of Western Kazakhstan became possible to a great extent thanks to the geological surveyors and builders, investigations and developments of Kazakhstan oil chemists carried out in collaboration with workers of the Southern Administration of Main Petroleum Products Pipelines of the USSR Ministry of the Petroleum Industry. It is extremely important that the complex investigation of petroleums of the Buzachi peninsula was started upon their initiative long before the adoption of any official decisions to develop the deposit.

Even in the analysis of space photographs of the eastern coast of the Caspian Sea the petroleum prospects of the region were clearly revealed, and later confirmed. It was necessary to develop an optimal plan for the extraction of those petroleums, and also an economically effective technology for their transportation. The main difficulty was created by special properties of Buzachi petroleums--their high viscosity and high content of tar and asphaltene substances. All this made it impossible to use ordinary methods of transporting them. In addition, Buzachi petroleum has proven to be a very valuable raw material not only for petroleum refiners but also for metallurgists, as it contains a large quantity of vanadium.

Scientists of the Institute of the Chemistry of Petroleum and Natural Salts of the Kazakh SSR Academy of Sciences together with specialists of the Southern Administration of Main Petroleum Products Pipelines have been engaged in a profound study of the problem. The investigations were conducted on specially developed and manufactured tubular stands. While the geologists were determining the contours of the deposit and the petroleum reserves more precisely, intensive work was being done on the stands and in the laboratories. Experiments were set up to test the effect of ultrasonics on the bottom-hole zone of Karazhanbas drillholes, which increased by several times the petroleum yield of a bed, the proposed petroleum mixture of the Buzachi peninsula was modeled, and an investigation was made of mixtures of Buzachi petroleums with those of adjacent regions (Mangyshlakskiy, Prorvenskiy, etc) to select optimal alternatives of their transportation.

As a result, by the moment it was decided to industrially develop the petroleum deposit of the Buzachi peninsula a group of Kazakhstan scientists and specialists had conducted all the detailed investigations which permitted selecting without delay an optimal method of transportation, estimate the possibility of mixing the petroleum with the petroleums of adjacent regions, select the method of pumping and order the necessary equipment. New effective and precise methods of determining vanadium in petroleum and economic methods of its extraction from raw material have been proposed.

But the Kazakhstan scientists and specialists receive credit not only for the carefulness of investigations but also for their high principles and ability to assert their point of view on a problem. The fact is that in planning the system of petroleum pipelines their recommendations were only partially refined. In Kiev, where the plan and the technical and economic substantiation were made, they used existing normatives more as a basis. It must be said that in any other case that would not have given rise to objections. But here is was a question of petroleum greatly different from others in its properties. In that case, the Kazakhstan scientists and specialists demonstrated, if that raw material has specific regularities, then the approach to it must be different, of course.

And they were able to assert their point of view. Instead of pipes with diameters of 350 and 530 mm, they laid pipes with diameters of 520 and 720 mm, and the capacity of the pipeline increased by 25 percent. By means of Prorvenskiy petroleums, used as a diluent for the heavy and viscous Buzachi petroleums, the number of pumping stations is reduced. Three instead of five. And this means that 100 fewer employees are required as servicing personnel, and less housing and service buildings are needed. For the desert terrain of Mangyshlak, with its acute shortage of manpower and high cost of building materials (every brick or concrete block has to be imported from a distance) this is of great importance. Finally, the release of construction workers and materials made it possible to reduce the period of pipeline construction by almost half. Reduction of the volumes of construction led not only to reduction of capital expenditures but also to a reduction of the expenditure of petroleum for heating and a reduction of electric power consumption.

The complex investigation of highly viscous petroleums of the Buzachi peninsula and development and introduction of a technology for their transportation, done by the director and head of the Laboratory of the Chemistry of Petroleum and Natural Salts of the Kazakh SSR Academy of Sciences, N. K. Nadirov, and B. U. Urazgaliyev, laboratory head of the same institute, in collaboration with specialists of the Southern Administration of Main Petroleum Products Pipelines A. I. Kashirskiy, A. A. Dergachev and V. V. Khutornyy, saved the state more than 25 million rubles on the introduced capacities alone and permitted drawing scarce raw material into use.

This great and important work, advanced in competition for a State Prize of the Kazakh SSR, will contribute to more effective and rational use of the underground resources of Kazakhstan and to the further development of the national economy of the republic.

2174
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FUELS

SEARCH FOR NEW ENERGY SOURCES, SHALE PROCESSING SURVEYED

Riga SOVETSKAYA LATVIYA in Russian 30 May 80 p 2

[Article by Y. Eglit, chief of the Latvian Branch of the Central Scientific Research Institute of the Maritime Fleet, candidate of economic sciences: "For Pure Air Over the Baltic"]

[Excerpts] In addition to industrial facilities, maritime ships pollute the air as well. The average ship with a displacement of about 10,000 tons burns up to 30 tons of fuel a day and discharges as much as an average factory. The Baltic is in an especially unfavorable position, being an internal sea. Scientists of the Latvian Branch of the Central Scientific Research Institute of the Maritime Fleet have actively engaged in solving the problem of saving the Baltic ecologically.

One of the directions of our work is to create on the ships a system for utilizing various kinds of petroleum residuals. An important element of the system is a rotary disperser. It makes it possible to mix petroleum residuals in water with fuel, as a result of which an emulsion which burns well is formed. The dispersers have successfully undergone testing and are now installed on a number of ships of the Latvian and Murmansk steamship lines. Such aggregates can also be used in the Latvian fishing fleet, for example, on the large refrigerated fishing trawlers. On just one ship with a displacement of 20,000 tons the annual economic effect reaches 3,000 rubles.

Because of the exhaustion of petroleum supplies and the increased cost of petroleum on the world market, both in our country and abroad they are searching for principally new kinds of fuel for internal combustion engines: hydrogen, natural gas, ammonium, suspensions of coal dust with diesel fuel, and products from the processing of combustible shale. This work also has another goal--to have fuel that is not harmful to the environment.

The Latvian branch of the Central Scientific Research Institute of the Maritime Fleet, under the leadership of V. Kornilov, candidate of technical sciences, is studying the possibility of using combustible shale as fuel for ship engines. This work is being done in conjunction with the faculty of thermal technology of the Riga Polytechnical Institute.

The product from processing combustible shale is shale resin. It completely replaces petroleum and is similar to it in composition and properties, and the modern technology for processing resin makes it possible to obtain high-quality motor fuel from it. The solution to this problem is of immense significance for the Baltic area, particularly for Latvia which has a considerable fishing, trade and river fleet. The products from processing light fractions of shale resin are shale benzene and diesel fuel. These can be used successfully in automotive and rail transportation and the residual products from processing fuel shales can be used at city TETs's and in boiler enterprises, while shale bitumin can be used as construction material. It becomes fairly important that shale deposits are so close--in Estonia.

Successful completion of the work and, the main thing, its rapid introduction on Latvian ships and in Latvian enterprises make it possible to hope that the air over the Baltic will become cleaner.

11772
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FUELS

PETROLEUM MACHINE BUILDING ASSOCIATION SUCCESSFUL

Moscow PRAVDA in Russian 8 Jun 80 p 2

[Article by Economist L. Naginskiy and Correspondent L. Tairov: "Behind the Old Walls"]

> [Text] The "Soyuzneftemash" All-Union Industrial Association of Petroleum Machine Building is operating in the city of Baku. It was basically organized out of oil enterprises that had formerly produced petroleum equipment. Now its composition includes 13 plants, 2 scientific research and technological planning institutes, a design office, an information and computer center, a construction administration, and a number of other administrations. So it was that a rather powerful industrial sector complex of the Ministry of Chemical and Petroleum Machine Building, the effectiveness of which cannot be doubted, came into being.

An association is a whole greater than the sum of its parts. During the 10th Five-Year Plan "Soyuzneftemash" increased its production volume by 1.6 times, it produced equipment worth 50 million rubles in excess of the plan, and it assimilated 253 types of articles, with about a third of all products being awarded the Seal of Quality. The achievements of the Azerbaijan SSR machine builders were recently noted in a letter of greeting from CPSU Central Committee General Secretary, Chairman of the Presidium of the USSR Supreme Soviet L. I. Brezhnev. The association was awarded the Order of Lenin.

An increase was achieved in production of equipment for which the country's fuel and energy complex experienced an acute need--well fittings, walking beam installations, and many others.

But just a little more than 10 years ago most of the association's enterprises were unable to complete their assignments, and many of their parts were unprofitable. The scientific research and design institutes of petroleum industry offered little help to production.

What went on in these years? How are such fundamental changes achieved? We know that the association did not build any new enterprises in the last 10 years. This means that all of the advances were made behind the same old walls. Hero of Socialist Labor Shamil' Aliyev, an aging milling machine operator, had this to say:

"The main thing from my point of view is that the association's work is under the constant attention of the Ministry of Chemical and Petroleum Machine Building, local party organizations, and mainly the Azerbaijan SSR Communist Party Central Committee. This makes it possible to raise the level of business management, and to strengthen the role of communists. An atmosphere of high exactingness and responsibility has been created in every collective."

The association's development involved reconstruction, expansion, and reequipment. Fundamentally new production operations appeared on the territory of the old plants. Twenty-six shops were fundamentally reequipped, dozens of automatic and mechanized flowlines were introduced, and about 900 units of equipment were replaced.

The key link in the entire effort was specialization--in terms of objects, units, and production processes. The small, scattered shops were replaced by the largest steel casting complex in the Transcaucasus. Today it not only satisfies local needs but also supplies semifinished products to plants of the Ministry of Chemical and Petroleum Machine Building in other regions of the country. Production of forged pieces has been concentrated. Now shaped metal and piping production is being centralized, which will considerably reduce metal wastes and raise labor productivity.

For many years the association experienced a shortage of cutting tools. They were manufactured in ill-adapted buildings. This had an unfavorable effect upon cutter quality, and the outlays exceeded the standards by 5-8 times.

In accordance with the specialization plan, a high-output shop was erected at the Plant imeni Lieutenant Shmidt; now this shop satisfies a large proportion of the demand of the plants for these tools.

In order to increase production of well fittings, walking beam installations, drilling units, and flow control equipment, the output capacity of mechanical assembly production had to be increased. As an example, manufacture of gear transmissions was a bottleneck. But now centralization has made it possible to almost double the output of these parts. Their production is now concentrated at a single plant.

A significant impact was enjoyed from specializing production of well fittings--extremely important equipment (especially to oilmen of Siberia)--at the Plant imeni Lieutenant Shmidt. Colleagues of the scientific research institutes reviewed the design drawings together with enterprise workers, they made an effort to reduce the amount of labor required to produce the articles, and they transferred production of some of the parts and units to other plants. As a result equipment production grew by almost 2.6 times in 10 years.

A possibility appeared for introducing economical, highly effective production processes. Just the forging of the locks and welded ends of drilling pipes made it possible to save 2,000 tons of metal in a single production line, and reduce the laboriousness of mechanical part working by a third.

The Bakinskiy Rabochiy Plant converted to series production of walking beam installations of new designs with high operational qualities. The reconstruction done here is typical of Azerbaijan SSR machine building: The enterprise, which is hemmed in by oil production facilities, is being built without territorial expansion. It stands to reason that this is not simple at all. Safarili Mamedov, one of the republic's expert builders, tells the story:

"At the site of the antiquated shelters, we are erecting a modern building which will double the output of walking beam installations. As the area under construction expands, we are literally forced to step on the toes of the machine builders. They are trying to utilize every productive hour, and without awaiting completion of construction, they having managed to complete the order of the Siberian oilmen through partial reconstruction."

Conversion to a trilevel system of administration played an important role in development of the republic's petroleum machine building industry. The association's new organizational structure has proven its viability. One collective form of administration known as the council of directors is enjoying increasingly greater authority. This council actively influences all activities of the enterprises, it is raising responsibility for end results, and it is promoting development of a state approach to problem solving. The council has promoted universal introduction of a method of standard wage planning based on the experience of chemists in Shchekino. As a result the zone of services has broadened, and a more-effective bonus payment system has been assimilated. Just last year alone more than a thousand workers were freed for other jobs.

Economic methods of control have enjoyed extensive acceptance in the association. As an experiment, the work of the enterprises is being evaluated on the basis of "net production." It has been established that while growth in total production volume was 57.8 percent in 4 years, the increment in "net production" was 94.3 percent.

Here is how practical matters stand with the Plant imeni Montin. This plant produced valves for equipment to be used in especially complex geological conditions. They were usually made from high-alloy steel. But sometimes it happened that the steel of the required brand was unavailable, and so the plant specialists suggested substituting it by carbon steel subjected to the appropriate heat treatment. The quality of equipment did not suffer, but the enterprise management argued against the change, since it meant almost a ten-time decrease in the cost of the valves, and hence a worsening of all of the plant's reporting indicators. A classical model of conflict between production effectiveness and the interests of an enterprise arose. Working with the Ministry of Chemical and Petroleum Machine Building and the USSR State Committee for Prices, the association's economists arrived at a proper solution to this problem: Prices were frozen at the "gross production" level until the end of the five-year plan, and the level of consumer prices was significantly reduced.

Now the effectiveness of scientific developments has risen noticeably, the rate of introduction of these developments has accelerated, and the interest of enterprises in raising the technical level of their products has grown. Since the beginning of the five-year plan 257 scientific and technical developments and 112 progressive production processes have been introduced.

Statements by the workers and specialists indicate that the reserves for further growth have still not been exhausted. "Soyuzneftemash" chief R. Mamedov had this to say:

"We must update products of all enterprises. We must not have any lagging enterprises, but nor should we tolerate enterprises that are 'just making it'."

Product quality is being kept under special control. Today, a third of the products are honored with the Pentagonal Seal of Quality. However, the advances are sometimes eroded by the negligence of certain workers. There were many complaints about the poor quality of deep-well pumps produced by the Plant imeni Dzerzhinskiy. Finally, after a lot of hard work, they finally learned to make bushingless pumps, and quality has risen.

The council of directors is channeling the efforts of the machine builders at improving the end results of their work. In particular, all items of the budget are being analyzed meticulously, in-house reserves are being revealed, and assignments for their utilization are being imposed upon every shop, service, section, and team. This is aiding in the search for the possibilities of adopting counterplans and socialist pledges, it is raising the responsibility of all services, and it is encouraging every participant of the process--from the plant director to the worker--to participate in production administration.

The association has written up assignments on labor mechanization, reduction of personnel turnover, and reduction of time losses. Plans are being made to organize integrated and specialized teams that will be paid on the basis of their end results, and the experience of Shchekino workers is being introduced. But the republic's scientists are still not participating enough in development of progressive methods, particularly the team order. Their contribution could be much more substantial.

Extra production based on counterplans and socialist pledges will insure a production increase of 76 percent by the beginning of the 11th Five-Year Plan. The annual plan for product sales is to be completed by 26 December. The machine builders will assimilate dozens of new types of equipment awaited by the country's geologists, drillers, and oilmen.

11004
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FUELS

EKIBASTUZ FUEL-ENERGY COMPLEX

Moscow IZVESTIYA in Russian 20 Jun 80 p 2

[Interview with B. Isayev, first secretary of Pavlodarskaya Oblast Party Committee, by Yu. Grin'ko, P. Kulagin and G. Shipit'ko, IZVESTIYA special correspondents, Pavlodar: "Kazakhstan: Experience, Reserves--The Second Mountain of Ekibastuz"]

> [Text] The analysis of the situation on the principal projects scheduled for completion this year, performed recently by the CPSU Central Committee and personally by Comrade L. I. Brezhnev, obligates paying special attention to accelerating the activation of projects assuring a reliable satisfaction of the nation's demand for fuel and power resources. A major task for 1980 and the subsequent years is the acceleration of the construction of the Ekibastuz Fuel and Power Complex, which is of tremendous importance to the national economy.
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> What is the progress of the construction of this largest project in Kazakhstan? How is the program for its economic and social development being fulfilled. These questions particularly agitate at present the party, Soviet, and administrative agencies in the region. These questions are now the subject of an interview between our special correspondents and First Secretary of the Pavlodarskaya Oblast Party Committee, Deputy to the USSR Supreme Soviet B. Isayev.

Question: Boris Vasil'yevich, the creation and development of any major industrial complex upsets the normal routine of life in the region affected. What changes in the socio-economic life of the oblast have taken place since the initiation of the Pavlodar-Ekibastuz Territorial-Production Complex?

Answer: It is hardly possible to enumerate the new spots that have appeared in the last 10 years on the economic map of the Pavlodar region near the Irtysh River. I'll only list the projects representing, as the saying goes, the backbone of industry: The ferroalloys plant and the state regional electric power plant in Yermak--the largest in the eastern USSR; the petroleum refinery and the tractor and aluminum plants in Pavlodar; the Omsk-Pavlodar petroleum pipeline; the world's largest coal mine, Bogatyr'; and the first of a series of thermal power stations in Ekibastuz--a 500 MW turbine-boiler unit which already generates power that is being used to further develop the complex.... Nearly all types of modern transport--aviation, rail, waterway, automobile, pipeline--have converged at our "crossroads."

The Pavlodar-Ekibastuz Territorial-Production Complex is based on cheap coal and energy. But the path toward these resources is not so cheap. The construction of the Ekibastuz complex has been estimated at nearly 8 billion rubles. The state invests these funds in the development of large Trans-Ural coal deposits because it is these that provide an ironclad guarantee of the success of the subsequent programs for the economic development of our nation as well as of, to one extent or another, the countries of the socialist camp. Hence it is nothing surprising that in recent years so much impetus has been given to developing the region.

Question: That is, an economic potential assuring the development of the complex at a definite pace has been established. Is this potential always rationally and adequately exploited?

Answer: The establishment of such large socio-economic subdivisions as the Pavlodar-Ekibastuz Territorial-Production Complex largely hinges on the initial period of development of the region, on the rational allocation of manpower and material resources, and on the development of the entire social-communal structure. Unfortunately, certain of these principles have been violated during the first years of establishment of the complex. As a result, the pace of construction of the unique state regional electric power plants has been disrupted, for which the oblast party organization and certain ministries have been sharply criticized at the November (1979) Plenum of the CPSU Central Committee.

Recently both builders and coal miners have received substantial material and manpower support. Important steps have been taken to improve the administration of capital construction. The Ekibastuzenergostroy, Kazakhstan's largest power construction trust, has been set up. The structure of the Ekibastuzshakhtostroy Mine Construction Combine has been made more flexible. Last year was a turning point in reaching a smooth rhythm of operation of the intricate machinery of the complex. In that one year the utilization of capital outlays was fivefold as high as in 1976--the first year of construction of the series of state regional electric power stations. For the first time coal extraction reached 59 million tons, of which 85 percent by means of heavy-duty rotary excavators. Improved equipment also is being supplied for open-strip operations. That is, the socio-economic background of the complex has markedly improved.

However, many obstacles still bar the path toward the complete exploitation of the potential. Of course, problems should not be exaggerated, but they should not be whitewashed either. I'll list some. So far the construction of the coal part of the complex lags markedly behind schedule. The situation is as follows: in accordance with the target in 1985 the extraction of Ekibastuz coal should reach approximately 105-115 million tons a year. To this end, plans exist to build within the next few years the Vostochnyy Mine with an annual extraction of 20 million tons of coal and to modernize the Severnyy Mine so as to increase its extraction capacity to 35 million tons. The whole of these measures will cost half a billion rubles. But the current capacity of the Ekibastuzshahtostroy Mine Construction Combine is such that it can handle barely one-third of that construction. It is desirable to draw the attention of the Gosplan, the Gossnab, and the USSR Ministry of Coal Industry to the fact that the construction base of that combine is growing at an impermissibly slow pace: It has not utilized even one-tenth of the funds allotted for its expansion.

There also exists an urgent need for accelerating the technological reequipping of extraction facilities. Mine equipment is worn out and the existing plant for the repair of mining and transport equipment copes only with one-half of its orders. Moreover, that plant lacks the facilities for the general overhaul of complex rotary and transport equipment. The Ministry of Coal Industry should have started modernizing the repair base as far back as in 1978 and completed the job within three years. Following its modernization, the plant's capacity would have increased fourfold. But so far nothing has been done about it. We also are concerned about the lack of a power facility repair base for the Ekibastuz state regional electric power plants which, after all, use unique equipment. In this connection, I support the idea of the Siberians regarding the organization of a special autonomous cost-effective repair service.

Question: Last January at the meeting of the party and administrative activists of Ekibastuz it was stated that "relay-race" labor competition is absent in the construction of the series of state regional electric power plants. What is impeding the introduction of this progressive mode of interrelation of participants in the construction of that grandiose project?

Answer: A relay-race competition follows two paths: interregional and within the complex. During tbe first stage of construction of that series of plants both these paths proved to be rocky. This may be due to various causes: first, the project itself is unique--several power generating units are being built at the same time. The project is new, there is no previous experience, and its implementation has to be often revised. Secondly, the interests of some 20 ministries collide in the construction of this project, and it takes time to coordinate them. Lastly, so far there is no comprehensive approach to the development of the Pavlodar-Ekibastuz Territorial-Production Complex. This results in a marked lag in the formation of auxiliary interbranch types of production. Under these conditions it is fairly difficult to maintain a stable rhythm of "relay-race" competition.

Of course, in recent years builders have become more experienced and better organized. At present "relay-race" contests are being established on housing and civic construction sites. Installers, finishing workers, electricians, and plumbers are entering into the appropriate agreements.

It is necessary to expedite the solution of principal problems under the jurisdiction of ministries and departments. The unique nature, large scale, complexity, and tight construction schedule of the fuel and power complex require establishing a state coordinating commission or council which could include responsible representatives of ministries, departments, planning agencies, the USSR State Committee for Science and Technology, and the party and Soviet organizations of the republic and oblast.

Each year the importance of the Ekibastuz rail hub is increasing. Three-fourths of all freight in Pavlodarskaya Oblast passes across that hub. Its complete renovation has started. To this end, more than 200 million rubles has been allotted. It has become a complex matter to manage this increasingly intricate mechanism. Hence it appears worthwhile to set up a separate Ekibastuz division of the Virgin Lands Railroad.

At present the system of requisitions for and allocations of material and equipment resources is too ponderous. As it operates now, the paperwork has to be handled successively by the Pavlodar Supply and Marketing Administration, the Virgin Lands Supply Administration, and the republic and Union gossnabs. The administration of material and technical supplies in the region would markedly improve if a territorial subdivision of the Gossnab were to be set up in Pavlodar along with a general and highly mechanized depot. All this will facilitate the interaction of territorial and branch-of-industry interests, the composition of balanced plans for the production and distribution of principal types of products, for capital construction and for the development of the socio-communal infrastructure.

Question: And yet, Boris Vasil'yevich, the most important and perhaps most difficult factor in building the territorial-production complex is the supply of manpower resources to the region, along with the assurance of adequate up-to-date social and living conditions for the population. How is this problem being solved?

Answer: From whatever side the developmental prospects of the region's productive forces are considered, the human factor is always encountered. Hence unflagging attention must be paid to interpersonal relations on the construction site and in life, as well as to the spiritual aspirations and material concerns of the people. In this context, the first stage of construction in Ekibastuz has been highly instructive to us.

It cannot be said that the problem of living conditions here has been completely resolved. IZVESTIYA has reported on this matter before. The developmental scale of the complex requires doubling and tripling the effort to establish the [socio-communal] infrastructure. The army of builders has grown to 18,000 people. The volume of construction and installation operations has grown fivefold. To assure a balanced level of coal extraction in the next few years the Ekibastuzugol' Coal Association needs an additional 6,000 miners, roughly speaking. The entire republic is helping this project.

Of course, the years of creation also are the years of ardent disputation, of errors, of creative searches. It is necessary to understand the psychology of certain administrators whose interests are narrowly confined to production problems. There also have been and continue attempt to "split up" Ekibastuz into separately administered housing projects. The power-plant people are especially excited about this matter. There is even a saying on construction sites: a housing project next to each smokestack. But the city soviet has resolutely supported the idea of a single modern well-built city for all--for the miners, for the builders, and for the power-plant people. The party oblast committee and the oblast executive committee also support this idea.

Purely tactical mistakes also have been made. The USSR Ministry of Energy decided to supply housing components for Ekibastuz from Bratsk and Naberezhnyye Chelny. This proved to be a mistaken decision. A local housing construction industry should have been established from the very beginning. This is finally being done now, after a costly delay. The Yermak and Ekibastuz reinforced concrete products plants are being urgently modernized, and the capacities of the Pavlodar Housing Construction Combine are being expanded.

And yet, despite the great difficulties during the first stage of construction of the fuel and power complex, in 10 years Ekibastuz will become the pearl of Northern Kazakhstan. It will become a city of shady lanes and squares, water fountains, theatres, places of culture, and sports stadiums.

The obstacles on this path are numerous, and they cannot be overcome all at once. We are carefully analyzing the fruits of our work, identifying the bottlenecks, exploring more efficient ways and means. We strive for common sense and order in everything.

Question: In regions of intense industrial development a major problem is the supply of foodstuffs to the population. Could you tell us about the extent of the program for developing the oblast's agriculture, especially near the industrial centers?

Answer: The Pavlodar region near the Irtysh River is chancy farming country. The average annual precipitation is less than 300 millimeters. In view of this scientists proposed most reliable techniques such as the strip system of crop rotation, and cultivation without upturning the soil. On the whole, the 10th Five-Year Plan period proceeds satisfactorily for the oblast's agriculture. Livestock feeds are available. The capacities for the production of meat, milk, eggs, vegetables, and potatoes are increasing. We are betting on the creation of large specialized agricultural complexes.

There exist vast irrigable tracts. Land irrigation produces assured harvests of vegetables, potatoes, and fodder.... Experts have calculated that in the next 15-20 years the area of irrigated lands in the oblast can be augmented to 340,000 hectares. This of course entails substantial expenditures of Irtysh water. As a result, the question of examining the water balance sheet of the Irtysh has already become ripe: the examination must be done with allowance for the water demand of agriculture, industry, and other branches of the Pavlodar-Ekibastuz Territorial-Production Complex.

I would consider this question more broadly. The growing industrial complex in a combination with a vast agricultural zone needs its own scientific research center which could deal with the problems of both irrigated farming and the expansion of plantings of groat crops (for which the premises are good) as well as selection work. The basis for setting up such a research center could become the local branch of the All-Union Scientific Research Institute of Grain, Pulse, and Groat Crops as well as the oblast experimental station.

The research center could also provide substantial assistance to the development of the agrarian shops of industrial enterprises. Incidentally, in our cities this work is developing at a satisfactory pace.

The establishment of the Pavlodar-Ekibastuz Territorial-Production Complex represents not a special drive but a purposeful state program. Such construction projects should be placed under a special watch as regards both the system of the allocation of material and manpower resources and the observance of contractual and project-estimate discipline, and also the establishment of a developed infrastructure. This is precisely the goal toward which we are inspired by the decisions of the 25th CPSU Congress and the November (1979) CPSU Central Committee Plenum, as well as by the resolutions of the party and government concerning the development of territorial-production complexes.

1386
CSO: 1822

DEVELOPMENT OF EKIBASTUZ COMPLEX

Alma-Ata KAZAKHSTANSKAYA PRAVDA in Russian 22 May 80 p 2

[Article: "Constant Attention for Ekibastuz Complex"]

[Text] In the decree of the Central Committee CPSU entitled "On Work of the Pavlodar Oblast Party Organization in Implementing the Decrees of the Central Committee CPSU on Saving Fuel and Power Resources at Enterprises and Construction Projects" it was drawn to the attention of the directors of local Party, soviet and economic organizations that there have been violations of the deadlines and fullness of development of the Ekibastuz coal basin, a lag in the completing of power facilities, living quarters and cultural, everyday-life facilities.

The Central Committee of the Communist Party of Kazakhstan and the Council of Ministers Kazakh SSR have given great importance to intensification of construction of components of the Ekibastuz fuel-power complex, the development of Ekibastuz city and the creation of the necessary production and everyday facilities for the workers. The Central Committee of the Communist Party of Kazakhstan and the Council of Ministers Kazakh SSR have adopted a decree "On Additional Measures for Intensifying the Construction of Components of the Ekibastuz Fuel and Power Complex and Development of Ekibastuz City." It has been proposed that the Pavlodar Oblast Committee of the Party and the Oblast Executive Committee, the Ekibastuz City Committee of the Party and the City Executive Committee, and the directors of economic organizations take measures for eliminating the shortcomings in the development of the Ekibastuz coal basin mentioned in the decree of the Central Committee CPSU.

During the years 1980-1985 plans call for a considerable increase in the construction of dwellings in Ekibastuz city; a motion picture theater with 800 seats is to be put into operation; there is to be a nursery for beautification of the city, as well as buildings for urban, Soviet, social and economic organizations, and also enterprises for the repair of complex everyday equipment rendering services amounting to 600,000 rubles annually.

During 1981-1982 the parts of large-panel dwellings with a total area of 5,000 square meters annually must be fabricated for the trust "Ekibastuzenergostroy" from its material resources.

The Ministry of the Construction Materials Industry of the Kazakh SSR during the period 1981-1985 must allocate to the "Ekibastuzugol'" Combine the components for two-apartment dwellings at the rate of 50 units annually and during 1981-1982 allocate to the "Ekibastuzenergostroy" trust the construction components for completing large-panel dwellings with a total area of 5,000 m^2 annually.

During the period 1981-1983 the Ministry of Heavy Construction Kazakh SSR has been assigned the construction of large-panel dwellings in Ekibastuz city for the "Ekibastuzugol'" production combine. The Pavlodar, Kustanay, Kokchetav, Tselinograd and Severo-Kazakhstan Oblast Committees of the Party and the oblast executive committees have been charged with ensuring the timely and multisided unloading of the parts of large-panel dwellings at Ekibastuz and monitoring their construction.

During 1981-1983 the Ministry of Highways Kazakh SSR must accomplish the planned volume of work on construction of roads inside and outside the area of construction of facilities for the Ekibastuz fuel and power complex.

It is proposed that the Ministry of Forests Kazakh SSR, the Ministry of Power and Electrification Kazakh SSR, the Pavlodar oblast executive committee and the "Ekibastuzugol'" production combine accelerate the development and implementation of melioration work for creating a sanitary-protective green zone around Ekibastuz.

The Ministry of Agriculture Kazakh SSR, during the period up to 1983, in the Ekibastuz region should construct and put into operation a livestock complex for the feeding of 54,000 hogs per year and chicken plants for the growing of 3 million broilers annually. The Ministry of the Meat and Milk Industry Kazakh SSR has the obligation to increase the output of the Ekibastuz Meat Combine and the Ekibastuz Milk Plant.

The Ministry of Health Kazakh SSR must eliminate shortcomings in the organization of medical servicing of the population in Ekibastuz city, as well as broaden the network of health stations on construction sites. The Ministry of Public Servicing of the Population of the Kazakh SSR must take additional measures for improving the everyday servicing of the population, broadening the network of workshops, depots, reception points for the public services, including mobile, for the servicing of construction men. The Ministry of Trade Kazakh SSR, the Pavlodar Oblast Executive Committee and the Kazpotrebsoyuz must adopt measures for more complete satisfaction of the needs of builders and workers of the Ekibastuz fuel and energy complex. The Ministry of Culture Kazakh SSR must increase the level of mass cultural servicing of the population of Ekibastuz city.

The Pavlodar Executive Committee of the Communist Party of Kazakhstan and the oblast executive committee must direct the efforts of work teams, Party, trade union and Komsomol organizations to the unconditional implementation of production goals, ensure the broad development of socialist competition for increasing the rates of construction of production facilities and the timely completion of dwellings and cultural-service facilities in Ekibastuz city.

5303

CSO: 1822

FUELS

EQUIPMENT PROBLEMS FOR ELECTRODRILLERS IN TURKMEN SSR

Moscow PRAVDA in Russian 20 May 80 p 2

[Article by A. Yezerskiy and N. Morozev: "Forty Years in Diapers...Why Petroleum Workers Are Not Developing Electrodrilling"]

[Text] The newspapermen arrived at Kotur-Tepe in order to learn details concerning the new record of B. D. Logvinenko, the highly skilled master of high-speed drilling. This time the diamond bit had reached a depth of 5,250 m. The electric face motor had penetrated to such a depth for the first time. Using it Logvinenko's brigade in February of last year completed the plan for the Tenth Five-Year Plan. This had never happened before at the "Turkmenneft'" Combine.

But the mood among the "celebrants" was not very joyous. They told about their victory very briefly, with restraint, as if they had a burden on their shoulders. And then they explained: "Well, there will be no more records... We'll be lucky not to fall behind..."

We found out that the brigade was seriously concerned by the cessation of deliveries of electric drilling equipment and spare parts.

Naturally, here they were seeking a solution to the problem. They were shifting over to rotary tools. But this involved additional expenditures and a decrease of technical-economic indices. And the most unpleasant aspect was a shifting of personnel. Earlier at the Kotur-Tepe administration there had been 10-12 brigades engaged in electrodrilling and now there were only half as many.

Electrodrilling had proven itself indispensable under the complex mining-geological conditions of Turkmenia. Especially at Kotur-Tepe, where it was necessary to overcome high stratum pressures and temperatures. Here drilling is accompanied by the collapse of borehole walls, petroleum and gas "surges," the formation of gryphons and jamming of the tool.

It is precisely under such complicated conditions when turbo- and rotary drills act unreliably and electrodrilling performs excellently. There is no need for rotating the kilometer-long columns of pipe which can break from friction and fail: in electrodrilling power is fed to the face motor through a cable. The electric communication channel, by means of surface instruments and a telemetric system, makes it possible to "glance" into the deep layers, determine the position of the tool, the trajectory of the column and other important parameters, a knowledge of which is necessary for selecting the optimum regimes for drilling slanting boreholes.

There are other merits, making it possible to carry out the drilling of boreholes, from which the inflow of petroleum is much greater. It is not without reason that as early as 1958 the Soviet electric drill was awarded the Grand Prix in Brussels...

It would seem that with such merits the progressive equipment should find the broadest use in the petroleum and gas industry. Alas! Progress in this area was not conspicuous. Whereas at the end of the Ninth Five-Year Plan the "Turkmenneft'" Combine drilled 123,000 m annually by electrodrilling, in 1979 the figure was only 82,500 m. The combine had not received many face motors.

Why was the delivery of electrodrills to petroleum workers reduced? After all, their 40-year history included the state certificate of quality, world records and international recognition.

Let's trace the history of the innovation. Seven scientific research institutes and thirteen design bureaus spent several years in perfecting its design. Finally a major landmark was reached in the tool's history. The Khar'kov Electromechanical Plant was designated its "parent" and was made responsible for the production of electrodrills and spare parts. The Ministry of the Electrotechnical Industry was delegated responsibility for coordinating the work.

Although not without difficulties, year after year the bit with the electric motor began to push its way forward. About 1 1/2 million meters were drilled using it at this same Kotur-Tepe deposit, where more than a third of all the volume of electrodrilling in the country was concentrated. Hundreds of thousands of rubles were saved. A particularly great effect was obtained from the use of telemetric systems for the drilling of a cluster of boreholes: one rig was used in drilling several holes, using them thereafter for the output of petroleum and gas simultaneously from several strata.

"This is a progressive method," states V. Petrov, general director of the "Turkmenneft'" Combine. "We planned to use it at Barsa-Gel'mes and at other deposits where the drilling of boreholes is amidst unconsolidated barkhan sands, a widely branching network of gas and petroleum lines and production structures..."

And is there a need for telemetric systems for drilling only in one republic? According to the orders placed with the Ministry of the Petroleum Industry, the call for them amounted to 420 outfits per year. But suddenly in 1976 the Ministry of the Electrotechnical Industry suspended the production of those systems.

Earlier as well there had been more than a few reorganizations among the enterprises associated with the production of the electrodrill. For example, in 1972 the Khar'kov Electromechanical Plant removed it from production. The Ministry of the Electrotechnical Industry had put the output of the units into experimental production. It is fitting to recall that it was constructed in Khar'kov especially for experimental work on improving components of the outfit. Now, however, it was forced to undertake its standard production, and as it was found, was not prepared for this.

And the reorganization continued. At the design bureau several laboratories and sections were abolished. Among these were those on which the fate of the electrodrill was dependent. We note that the viability and the lifetime of the unit at the face are dependent to a great extent on reliable hydraulic protection. And precisely the hydraulic protection section was reorganized. The test stand with the expensive highly precise equipment, so to speak, was put into the street...

Many kinds of experimental studies were cut off. Only the production of spare parts for already operating electric drills continued. But the experimental plant could not handle even that.

In 1973 the bureau together with experimental production were put under the Khar'kov Electromechanical Plant. The drilling masters of Turkmenia, Bashkiria, the Ukraine and other petroleum and gas regions of the country needed electrodrills. But the enterprise did not turn out more than 150 of them.

In this same year, 1973, there was a conference of representatives of three union ministries: petroleum, gas and the electrotechnical industry. It was noted that electrodrilling needed more careful attention. The conference recommended that a specialized scientific-production combine be created in the system of the Ministry of the Electrotechnical Industry for the manufacture and delivery of progressive equipment.

And so a rational foundation was laid. But for it to actually become effective five more years had to elapse. Such a combine was finally created in 1978. Enthusiasts of the new equipment sighed with relief: "Now the electric drill has a dependable master." But time passed and where was the equipment?

At the beginning of last year the Khar'kov Experimental Plant, the only enterprise in the branch producing this equipment, was reoriented to the production of submersible electric pumps for the extraction of petroleum from wells. Without question, such pumps are also needed by petroleum workers. But, after all, the problems of development of the petroleum and gas industry are not confined to pumps alone. What about the development of deep drilling of boreholes in new areas and the further exploration of old deposits? Why is it that electric drilling -- the most reliable, the most promising and the most economical method, is "put on the shelf?"

The section chief V. Fedotov of the Ministry of the Electrotechnical Industry does not agree with such a state of affairs. "No one gave orders for the people at Khar'kov to cut off the production of electric drills. On the contrary, we are taking measures for increasing the production of effective face gear..."

"Then why have the Turkmen petroleum workers remained without electric drills?"

"It is difficult to say," responds a worker at the ministry. "At Khar'kov there could be breakdowns on the production line..."

It is characteristic that the chief of the petroleum and gas section of the USSR Gosplan also could not clearly explain the situation with the electric drills.

We call up Khar'kov. The phone was answered by the chief engineer of production S. Tisnichan.

"It is true, we did not receive any orders to take electric drills from the production line," he answers. "On the other hand, decree No 42 dated 23 January 1979, signed by the Minister of the Electrotechnical Industry A. Antonov, obligated us to produce 570 submersible electric pumps. It was necessary to lay aside the agreed-upon obligations and reorganize for the new production. Production is feverish and we must pay high penalties to customers for interruptions in deliveries, but the order must be met!"

And so it goes. Everyone gives praise: it is an important and necessary undertaking. There are no opponents, only supporters and well-wishers. The decisions and decrees are regarded as correct and the situation not only just remains the same but even gets worse.

It is difficult to reckon the losses from the breakdown in the progressive method for drilling boreholes, but the cost is too dear. The failure of the Ministry of the Electrotechnical Industry and the Ministry of Chemical Machinery to meet their obligations in producing and delivering spare parts for the electric drills, cable sections for the conductor, telemetric systems and drilling locks is resulting in a deterioration of the indices of many enterprises in the petroleum- and gas-producing industry.

The Ministry of the Petroleum Industry is also responsible that the electrodrill in essence is at a standstill because it has not taken on itself specific obligations for introducing progressive drilling methods. Now the situation is being corrected in haste. In actuality, there must be no delay.

5323
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OFFSHORE DRILLING BEGUN IN BAKU

Moscow TRUD in Russian 10 Jun 80 p 1

[Article by T. Kasumova: "Petroleum From the Depths of the Caspian"]

[Text] The first borehole of a new promising marine deposit "imeni 28 Aprel'" has been put into operation in the Caspian. Hundreds of tons of petroleum poured through a deep-water pipeline from a separate pile base to the tanks of Neftyanyye Kamni.

This pipeline, laid by the SMU-3 team of the "Kaspmorneftegazstroy" trust, is the deepest underwater line in the country. The water depth in this sector of the Caspian attains 85 meters. However, despite all the complexities, the builders by means of a special pipe-laying ship, the "Suleyman Vezirov," completed the construction of the oil pipeline with a length of more than 11 km ahead of time.

...The last meters of the pipeline, the welded ends of whose segments have been checked with X-ray equipment, are being laid on the sea floor. The final testing is being carried out; a powerful stream of water is being driven through the pipeline. The test revealed that the steel artery is ready for operation. And now with a turning of a valve the first petroleum of the new promising deposit, named the "28 Aprel'", the day when Soviet authority was established in Azerbaydzhan, poured through the pipes to the tanks at Neftyanyye Kamni. From there the petroleum is directed into the holds of petroleum tankers for Baku refineries.

Thorough preparations were made here for the new storming of the deep layers of the Caspian. The builders from the "Gipromorneft'" institute planned a unique individual base in the open sea; machine builders, in collaboration with scientists, constructed special drilling equipment. It was necessary to construct the underwater part of the platform to a depth as great as 85 m, whereas at Neftyanyye Kamni it does not exceed 30 m.

The best brigade, headed by Hero of Socialist Labor Israfil Guseynov, Deputy of the USSR Supreme Soviet, was delegated the task of drilling exploratory boreholes. The crack team of drillers, accomplishing the goals of the Five-Year Plan ahead of time, is now working on the tasks of 1983.

5303
CSO: 1822

FUELS

EXPLORATION OF USTYURT OIL GUSHER DISCUSSED

Tashkent PRAVDA VOSTOKA in Russian 6 Jun 80 p 1

[Text] The first oil gusher has come in on the desert plateau of Ustyurt. It is a result of 20 years of searches by geologists of the Karakalpak oil and gas survey expedition. "Black gold" was obtained from the third well drilled on the promising area of Western Barsa-Kel'mes, from a depth of 3190 meters. The well is a gusher. The petroleum is light and economical to refine. It also is advantageous that the well is only two kilometers from the railroad that passes through here. This creates good conditions for its use. The team of drilling foreman Babazhan Zhumashev drilled the well in record time and the team of foreman Ismail Karemov conducted tests.

The Ustyurt petroleum, the geologists have established, comes from Lower Jurassic deposits, which characterizes the industrial reserves. It is assumed that the well only brushed against the edge of the oil-bearing area.

Its center must lie under the Barsa-Kol'mes salty swamp, the area of which occupies over 170 square kilometers. The geologists and geophysicists are continuing their searches. The next well has been drilled 10 kilometers from the present one, on the edge of the Barsa-Kel'mes salty swamp.

2174
CSO: 1822

FUELS

LAGGING AT KARAGANDA COAL BASIN

Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 6 Jun 80 p 2

[Article by B. Glotov]

[Text] In the environs of Karaganda the land is broken up by slopes, drifts and coal mine shafts. Therefore it has been decided to remove the houses of the old city. Much hard work is to be done. More than 100,000 persons are now living here. Great resources are needed, and enormous areas of land are to be irreversibly expended on it. That will be the payment for an old miscalculation of the planners and surveyors, who "planted" the city on rich coal deposits.

Unfortunately, the same error was repeated later, when the new city was planned. Now the workings of mine imeni 50th Anniversary of the October Revolution have in fact arrived under it. The miners are mining coal under the city streets. In the settlement of Bol'shaya Mikhaylovka some streets have already collapsed. The miners have advanced to the edge of a high-rise of Karagand. And the oblispolkom has finally said "Stop!" to them.

That decision was not easily made. The fact is that under the new city are 11 coal beds, about 2 billion tons of high-quality fuel. It should be noted that during the entire time the basin has existed a little more than 1 billion tons of coal have been mined.

Twenty years ago, when the problem was being quite clearly sketched, approximately such a dialog as the following took place between those who were then the managers of the Karagandskiy sovnarkhoz and the coal basin.

"The coal must be taken, of course, but the city is not just a plaything and you will not simply move it from place to place," the former expressed doubt.

"Please don't disturb yourselves," the coal miners swept aside all anxieties, "we will conduct mining operations under the new city and fill in the worked space."

The decision appeared to be acceptable, and not just from the point of view of protection of city structures against destruction. The introduction of the proposed technology would also permit solving several other important tasks--economic, social and ecological. Above all the possibility of including considerable fuel resources in economic turnover would appear. The fact is that in the protective pillars left under the industrial and residential buildings of Karaganda are about 500 million tons of coal.

At the same time some problems in the protection of the environment would also be solved. Each year the mines and concentration plants of the "Karagandaugol'" Association leave on the surface 5 to 6 million tons of rock. Smoking and glowing dumpls, already occupying 200 hectares of fertile land, contaminate the atmosphere. Those waste piles can be put underground, and the rock can be used to fill the worked space.

In a word, the advantages are so evident that delays in the introduction of technology become difficult to explain from the point of view of common sense. It was all the more interesting to learn the opinion about that of people responsible for solving the problem.

"The coal miners simply do not want to seriously engage in filling, as it slows down the mining rate," agree M. Gel'fman, chief project engineer of the "Karagandagiproshakht" Institute, and M. Vasil'yev, filling sector head, Karaganda Coal Scientific Research Institute.

It would hardly be difficult to dispute the accusation. Actually, the technology is being introduced with unallowable delays. The flushing installation at the mine imeni 50th Anniversary of the Great October Revolution was constructed as long ago as 1972. All the preliminary operations cost several million rubles. But for some reason the tests have not been started. And when the local authorities called upon the "Karagandaugol'" management for a reply, they found a justification:

"The plan includes obsolete technical decisions, for example, excavations and individual timberwork are combined. Mechanized complexes must be used."

A reasonable objection. But it is incomprehensible why the association management did not advance it at once.

But the scientific associates of the Karaganda Coal Scientific Research Institute without further ado decided to modify for filling the series-produced "KM-87" complex, having equipped it with certain modifications. The mechanism obtained, made by out-of-date methods, was unwieldy, hard to control and inefficient. So far the complex has not been successfully organized, although the mine rationalizers and inventors are working intensively on its improvement and developments.

More or less serious tests of the complex were started a total of 2 years ago, on a considerably smaller scale than envisaged by the plan. But again everything was done in a slipshod manner. The complexes were started up on a calendar schedule because some filling equipment after many years of inaction had become unfit for use--the open-cut mine, railroad and water piping.

Naturally, troubles have set in. For examples, sand has begun to be shipped in trucks, not in self-dumping railroad cars. At the same time, it proved to be substandard, and there is no concentration equipment at the mine. This alone has considerably increased the cost of a ton of coal extracted from the flushing. And when S. Tleubabulov, section chief of mine imeni 50th Anniversary of the October Revolution, where the technology is mainly being introduced, calculated all the damage, he decisively stated:

"A useless affair! Flushing has brought us nothing but troubles and additional expenses."

"Not at all!" sais A. Rushin, chief engineer of the "Karagandagiproshakht" Institute. "There is no doubt of its economic advisability. It is only necessary to effectively follow the plan."

It is hardly worthwhile to consider the arguments of the disputing parties in greater detail. There is no doubt that each will find tens of arguments and each will be right in his own way. Isn't it better to halt the fruitless debates and put some sort of end to the matter? Some sort of prohibition is in effect. After a few years coal will nowehre be produced by the mine imeni 50th Anniversary of the October Revolution, which has a capacity of 4.5 million tons a year.

2174
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CHERVONOGRAD MINERS' DISCUSSION REPORTED

Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 9 Jul 80 p 2

[Article by N. Goncharov and L. Sotnik, special correspondents]

[Text] When we opened the "SI" mailbox hanging in Shaft No 5 of "Velikomostovskaya" mine, it contained many notes from miners of other coal enterprises of the city of Chervonograd. "You see," said Vasiliy Davydovich Marchenko, the first secretary of the party gorkom, smiling, "the miners' grapevine worked irreproachably," and suggested, "Let's invite the workers' deputies in all mines of the city to a meeting."

And it happened that way. At the appointed hour the miners of Chervonograd were met by P. N. Ivanov, Deputy Minister of the Coal Industry UkrSSR, N. P. Matyash, head of the coal industry sector of the CPUk Central Committee, L. A. Rzhotkevich, head of the Department of Industry of the L'vov party obkom, M. P. Bespal'ko, deputy head of the obkom propaganda and agitation department, N. S. Stebletskiy, head of the coal industry sector of the L'vov obkom of the CPUk, V. D. Marchenko and V. K. Chernenkov, secretaries of the Chernovograd party gorkom, A. I. Kizub, general director of the "Ukrzapadugol'" Production Association, S. V. Koroza, chairman of the ispolkom of the Chervonograd City Council of People's Deputies, B. A. Kutuyev, director of "Ukrsapadugol'" for economics, N. F. Trofimenko, chairman of the L'vovsko-Volynskiy terkom of the Trade Union of Workers of the Coal Industry, and V. K. Grigor'yev, director of shaft No 5 of "Velikomostovskaya."

The management of the sector and kray became acquainted in advance with questions from the newspaper's mailbox. But miners who had not posed questions previously, but who presented them at the time of the meeting, gathered in the hall.

The combine and the shovel

"You're not telling us anything," A. Kizub, general director of the "Ukrzavodugol'" Association lamented, "your mailbox showed up at our place at a very critical time. After many years of rhythmic work the L'vovsko-Volynskiy coal basin found itself in a shortfall in deliveries. Since the start of the year the undershipments have amounted to almost 180,000 tons of coal. And if one speaks of Chernovograd, seven out of 12 shafts there are lagging. The miners are unwilling to tolerate that. All the more so because the Chernovograd workers have more than once stepped forward with sensible working initiatives. It was precisely here that the leading mining teams withdrew equipment for socialist security, and the best of them have begun to successfully perform tasks with fewer personnel. To increase the productive capacities of shafts, in Chernovograd at a number of enterprises they have modernized the mines upon their own initiative, with their own forces and with minimum expenditures.

Responding to miners' questions, the Deputy Minister of the Coal Industry of the Ukraine, P. Ivanov, spoke in detail about the near-term prospects of development of the sector. Citing facts and figures, he convincingly showed that the state spares no resources for mining needs. How they are made available in the field and in the ministry itself is another matter. Frank opinions about this produced a very lively reaction of the hall. The miners did not conceal their mistakes and at the same time spoke of an urgent matter, of how they can and must help the coal ministry.

G. NAUMCHIK, tunneler brigade leader of "Velikomostovskaya" mine No 5: "I have a question for comrade Ivanov. I have been working in the coal industry since 1953. There was a time when I handled a pick, and even now, when there is so much equipment in the mine, at times I must take a shovel in my hands. At the working faces there are powerful complexes, but at times there are not enough very necessary mechanisms in the tunneling. There still is much manual labor. People leave for other work, and there are not enough tunnelers. How am I, a brigade leader, to struggle against the turnover of workers?"

P. IVANOV: "You are right to ask the question. Tunneling work holds back to a great extent the preparation of working lines. Today we have "4PP-2" and "GPK" tunneling combines available, but there still is only a small number of them, unfortunately. But the creation of new combines for rocks of medium strength is in the drawings stage.

"I can say that a decision has been made on the construction of a special plant in Prokop'yevsk. When it goes into operation the demands for tunneling equipment will be completely satisfied.

"New designs are now being developed, and progressive models for strong rocks are being tested. It is planned to produce the "4-PP-5" combine with a cross-section of 10 square meters. We will have an experimental model of the KRT combine. A unit for the erection of arched structures is being prepared for production."

Voice from the room: "Can't that work be speeded up?"

P. IVANOV: "I understand your concern, comrades. I can only say that we in the ministry are trying to do everything to have machines and means of small mechanization arrive at the face as quickly as possible."

V. TARASOV, tunneler team leader of "Velikomostovskaya" mine No 5: "What is being done to prove the tunneling with combines with reliable dust suppressors and collectors?"

A. KIZUB: "We have concluded an agreement with the scientific research institute. Half the work has already been done. We have received good installations."

Question from the room: "Comrade deputy minister, what do you think of rock cutting at the working face. That worsens the fuel quality."

P. IVANOV: "I feel the same as you--negatively. Why, in mining coal, do we also mine rock? Because up to now we have no real means of removing fuel from beds with a thickness of 0.70 meter or less. Therefore it also is necessary to remove it with complexes designed for thicker beds and to bring some rock to the surface along with the coal. This leads to a higher ash content and premature wear of mechanisms and makes the atmosphere dusty.

"True, at one of the Pavolgrad mines an experimental unit working without a combine and without the presence of people at the longwall is being tested. The first results are promising. We hope that by next year we will receive a test lot of such machines. If they justify themselves, of course, a way to solve the problem as a whole will be found.

"Incidentally, the question of quality of coal is acquiring special importance in the L'vovsko-Volynskiy basin. The Central Concentration Plant, the largest in the Union, recently began operations, but the interrelations between the mine and concentrator workers have not yet been regulated."

Question from the room: "Which indicators will be incorporated in the mutual accounts between mines, on the one hand, and the concentration plant, on the other?"

B. KUTUYEV, director of the "Ukrzapadugol'" for economics: "The order promulgated by the ministry requires keeping records of the content of ash or visible rock. If we consider only tons, without considering rock or ash content, then the users of coal do not thank us for that: they need calories, not tons.

"The putting of the large concentration plant into operation permits putting beds with a high ash content into circulation and prolonging the lives of many mines."

Question from the "SI" mailbox: "When will the spare parts supply be improved?"

P. IVANOV: "I will say straightforwardly, the situation is complex. There are not enough spare parts. The Druzhkovskiy Machine Building Plant provides the sector with a total of only 58 percent. We hope that the situation will improve, but it will not do so as rapidly as we would like. Incidentally, the construction of new plants for spare parts production and the reconstruction and expansion of existing plants are now envisaged.

Lessons of Reconstruction

"You see which complex questions of economics the miners are interested in," said the second secretary of the Chernovograd party gorkom, V. Chernenkov, approvingly, analyzing the workers' notes which had arrived. "The administration, khozraschet, moral and material stimulation, the competition and the interaction of subcontractors. Much has had to be done by the workers of the Ministry of the Coal Industry to give qualified responses to them."

And yet during the meeting a lively discussion flared up: the miners not only were interested in the situation in the sector but also proposed their own solutions, dictated by great labor experience and a warm striving to correct matters.

Question from the "SI" mailbox: "How does the ministry now evaluate the existing system of administration of the coal sector?"

P. IVANOV: "You know that the country's coal industry was the first to change to the three-unit system of administration. True, the time has arrived to evaluate both the positive and negative aspects of reconstruction. We see something positive in the fact that the possibility of centralizing a number of administrative functions has appeared. Mines have begun to use material resources better, and this has been reflected well in their work.

But individual negative aspects have also been revealed: some mine services have been weakened, in particular, that of the chief engineer. In our opinion the capital construction service should return to the mine. But here it is as it is with the technical control section, there still is no unanimity of opinion. Soem think it necessary to preserve the technical control service in the association, and others to return it to the mine.

"A month ago many of these questions were discussed by the USSR Ministry of the Coal Industry and the USSR State Committee for Labor and Social Problems. An appropriate document will be prepared in the very near future."

Before the deputy minister responded to that question, still another note reached him: "Three-unit--that's good. But don't forget the lowest but the main unit, the mining brigade. All is not well there, it seems. Take the 'thousanders.' Why are their wages lower than those of workers of ordinary brigades? Where is encouragement of innovators here?"

P. IVANOV: "You are wrong. The Ministry of the Coal Industry has approved recommendations that bonuses be paid to members of brigades that have produced 1000 or more tons a day from a single longwall. On the level of mining of 600 tons, shall we say, a brigade has the right to claim a 30 percent bonus, and on the level of 1000 tons that indicator increases to 67.5 percent, etc. Such is the rule in our association."

A. AKIMOV, Hero of Socialist Labor, working face team leader of "Velikomostovskaya" mine No 8: "We operate a "KM-97" complex with a rated load of 1005 tons. For those who do not have a 1000-ton load the wages are 500 rubles a month, and for us they are 480. I am not concerned at all about the money, but by the evaluation of labor, especially the moral..."

P. IVANOV: "Of course, in any matter there can be violations, but that is not the system."

Retort from the room: "Of course. Akimov is wrong?"

P. IVANOV: "Wrong if one speaks of the principle of material incentive of the 'thousanders.' But obviously he is right in the specific case. This must be understood in the association."

V. MARCHENKO: "We will have to look into it."

L. RZHOTKEVICH, head of the industry section of the L'vov party obkom: "It seems to me, comrades, that this question could not have arisen at all if we had informed the miners better about the practice of moral and material stimulation. There also is another aspect of this matter: the load on each longwall must be planned so that the possibilities of the face are completely revealed. For it happens that plans are made of 600 tons of daily production for a longwall, and it can produce 1000. It is easy to become leaders with such a reserve."

The mailbox contained questions connected with putting the wages of other groups of workers in order, particularly electricians and timbermen. The workers of the ministry and the association have made it clear that they included specific proposals that are being studied by the appropriate agencies.

Question from the "SI" mailbox: "What is your opinion about the experiment that has been started at our mines, where each member of a daily complex brigade starts to work in his own 'boiler'?"

P. IVANOV: "I also have a positive attitude toward such experiments. Analysis has shown that it is difficult to form a brigade of members of equal ability. One works better and another worse, but their labor is evaluated by the results of the work of the entire brigade. All this leads to obliteration of personal responsibility.

"We already have facts showing that when there is a member 'boiler' the output increases and wages increase. But we still do not recommend such an organization of labor to all mines--the question requires stucy."

Question from the room: "How is khozraschet being introduced in the coal industry, in the brigade unit?"

P. IVANOV: "We have begun to introduce the brigade system at the tunneling. The results have been encouraging, but there have been difficulties."

Question from the room: "How many brigades are participating in the experiment?"

P. IVANOV: "Four brigades. But even they are not always provided with resources by us. So that the introduction of the brigade system with us can be considered in the embryo."

Question from the "SI" mailbox: "Which workers' initiatives are being widely supported in the sector?"

P. IVANOV: "Above all the initiative "Not one lagging row!" It has been supported by 523 collectives, including 240 from the "Ukrzapadugol'" Association. The "thousander" movement has acquired ever-wider scope, and also the movement of brigades which have resolved to mine 500 tons of coal from a single longwall in thin deposits. This initiative has been taken up by 290 brigades in the republic, 17 of them in our association."

Question from the room: "What is the attitude of the ministry toward the initiative of brigades of our basis which have pledged to mine more coal with fewer workers?"

P. IVANOV: "As early as 1978 the managing board of the ministry has supported that good initiative. It has become widespread not only among us in Chernovograd but also in the mines of Donetsk and Makeyevka."

Retort from the room: "But with what effect?"

A. KIZUB: "At the 'Ukrzapadugol'' Association 112 persons have been released."

Coal and flowers

Chernovograd is the youngest city of the L'vov area. It was born at the start of the 1950's, when coal reserves were surveyed in Pribush'ye and mines began to be constructed. Now it is an enormous industrial and cultural center, with spacious streets and boulevards submerged in the greening of chestnut trees. In Chernovograd an excellent Palace of Culture is situated, as are a stadium, a museum of the history of atheism and religion, an art studio, tens of clubs, medical institutions, sanitoriums and dispensaries. In the last 4 years alone, 2000 workers' families have been resettled in new apartments. But new needs and new problems have appeared.

Question from the "SI" mailbox: "When will construction of the House of Pioneers and the music school start?"

P. IVANOV: "The construction of the Palace of Pioneers with 800 places is set for 1981-1982. The music school with 320 places ought to start with construction a year later. When the resources are allocated those facilities will be included in the plan of construction for the contracting ministry."

The answer was exhaustive, it would seem, but it did not satisfy the chairman of the Chernovograd gorispolkom.

S. KOROZA: "We have learned that the Ministry of the Coal Industry of the republic has eliminated those two facilities from the plan. Why?"

P. IVANOV: "Because the resources have not yet been allocated. As soon as we receive them, the work will start at once. The "Ukrzapadugol'" will appear in the role of customer and the Ministry of Industrial Construction of the republic in that of contractor.

"The growing city has advanced another problem, one not considered previously; in connection with the removal of coal from under part of the territory a cavity has formed that has led in turn to settling of the ground. The level on which housing rested began to sink, and the flood waters of the Western Bug contributed to this; in the spring some city sections fell into the flooding zone. The mailbox containes several notes with questions about this matter."

S. Koroza, chairman of the gorispolkom, reported to those who had assembled that a plan of complex measures to combat floods has been developed. Money has been allocated to subdue the waters.

The participants in the meeting greeted with satisfaction the report on the new system of constructing individual houses for miners. Half the loan allocated for the construction of such housing will be paid by the enterprise. In connection with that the following questions have arisen: will all workers of the coal industry be offered such a loan, or only certain categories; whether a certain length of service at a given enterprise will be required for a loan; what the maximum loan will be; whether age has an influence on obtaining a loan; whether one can depart from the standard plan in order to make a house according to one's own tastes, etc. The leaders of the ministry, association and city answered those questions in detail, emphasizing that the miner's contribution to the development of production and his desire to work further at his enterprise will be taken into consideration in each separate case.

At the meeting much was said about how to improve the summer vacactions of working people. The chairman of the L'vovsko-Volynskiy terkom of the Trade Union of Coal Industry Workers, N. Trofimenko, reported that, together with expansion of the existing vacation bases, the construction of new bases will be started--at the resort of Nemirov and in the Carpathians. The scenic places have already been selected."

Question from the room: "And on the Black Sea?"

N. TROFIMENKO: "The vacation base of our mine No 9 is there. We will expand it."

V. LAKIN, working face team leader, mine imeni 50th Anniversary of the Great October Socialist Revolution: "How will coal industry workers be provided with personal cars?"

P. IVAROV: "Each year about 10,000 cars are allocated to the ministry and distributed among the associations. The numbers are proper, you see, but we hope that there will be more machines."

Chernovograd has one interesting characteristic: the city and the mines are surrounded by a solid mass of flower and truck gardens. Here flowers are respected. They are everywhere. With their hands the miners have restored to life many hectares of unproductive waste land. We have seen how this is done: first the swampy places are filled in with rock from wate piles--a drainage layer is formed, then the rock is covered with soil brought in from afar, fertilizer is applied and the area is smoothed over. The Chernovograd miners--descendants of local grain growers--love the land and know how to cultivate it.

Question from the "SI" mailbox: "When will the sections be again used for collective flower and truck gardens?"

S. KOROZA: "According to some data we need 200 hectares of unproductive land. There is such land in the vicinity of the city, but they have still refused to allocate it to us."

With the first secretary of the party gorkom, V. Marchenko, we went out to examine those clumps of wastelands among the swamps and thin forests which it is proposed to use for collective gardens. We cannot understand why those lands, unsuitable for use by kolkhozes, cannot be allocated to gardeners? We are convinced that those wastelands could become flowering gardens in the near future.

Yesterday the first secretary of the party gorkom, V. Marchenko, telephoned our editorial office and said that the results of the "mailbox" had been discussed in the gorkom, gorispolkom and association. All the petitions and desires of the miners have been analyzed in detail. Much of what can be done directly in the city is being done.

On the eve of the July 1980 Plenum of the CPSU Central Committee the collective of mine imeni 50th Anniversary of the Great October Socialist Revolution has completed the Five-Year task. In honor of the coming 26th CPSU Congress the miners of "Velikomostovskaya" mine No 3 have resolved to complete the Five-Year Plan by 19 July, and their neighbors from mines No 5 and No 10, by Miner's Day. The coal mining rates of other mining collectives also are increasing.

The questions of the miners of Chenovograd have been discussed in the Ministry of the Coal Industry of the Ukraine. As the deputy minister, P. Ivanov, reported, the fulfilment of the mining orders has been brought under control.

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AZNEFT': REDUCING DOWN TIME OF FREIGHT CARS

Baku VYSHKA in Russian 12 Jun 80 p 2

[Article by A. Vagirov, deputy general director of the "Azneft'" Association]

[Text] The railroad faces serious tasks in handling increasing freight transport, accelerating deliveries of goods and reducing expenditures. Needed for that are efficiency and organization in the work of both the steel main line and of the shipper and receiver. The latter must introduce rational forms and methods of performing all operations and improve the technical equipping of freight handling organizations in order to assure timely loading and unloading of freight, and also its transport from the station.

At the November 1979 Plenum of the CPSU Central Committee, Comrade L. I. Brezhnev noted that shortcomings in the work of transport and above all of railroad transport have acquired special acuteness and have turned attention toward the need for a sharp increase of responsibility of the enterprises of industry, construction and trade for the timely loading and unloading of freight cars.

One of the large customers of the Azerbaijan Railroad is the "Azneft'" Association. The indicated shortcomings in the use of means of transport are characteristic also of its enterprises. In particular, it permits finding out about lagging of storage, with all the consequences flowing therefrom. Therefore in the association special attention began to be given to questions in the mechanization of loading and unloading work and the construction of special mechanized storage for free-flowing materials (cement, baryta and hematite). They are being erected to provide certain regions of oil extraction, drilling and construction with materials with very low transport expenditures and to curtail short-range hauls.

The oilmen have their own difficulties. The fact is that in the winter time, on the way from the supplier plant to the user baryta freezes and solidifies and is difficult to unload. In such cases all the work is complicated and the downtime of freightcars increases.

To avoid excessive downtime of freightcars, at the Imishla station a mechanized storage facility has been constructed, one capable of receiving and emptying 900 cubic meters of free-flowing materials. In quality they lag behind those which arrive from plants of shippers. For servicing personnel, working conditions have been considerably improved; the main burden of loading and unloading work has been laid on the shoulders of mechanisms. This also has permitted reducing the downtime of freightcars by 50 percent as against the established standard.

There also is another advantage. The mechanisms used for the unloading of freightcars are used in loading cement trucks. Thanks to the acceleration of their loading, half the number of machines cope with the plan for shipment of materials.

A mechanized storage facility will be constructed in the direct vicinity of the Karadag cement plant. It will consist of six vertical metal containers with a total capacity of 1700 tons for two grades of cement--construction and tamping. That storage facility, which will go into operation in the third quarter of this year, will completely supply the oil-extracting administrations on Apsheronskiy peninsula with tamping cement, and also the contractor organizations of the same zone with construction cement.

It will play a large role in putting shipments in order and cheapening them, as short-range hauls over the railroad will be eliminated.

Centralization of shipments is also being introduced in another zone. The construction of storage on the line at the Ali-Bayramly station resulted from a need to bring tamping material closer to "Sal'yanyneft'," "Shirvanneft'" and Muradkhandyneft'" of the Administration of Petroleum and Gas Production. It will arrive at the storage facility in cars and will be unloaded by a mechanized method. From there it will be transported to the wells in specialized trucks. The new storage facility is to go into operation by the end of the year.

The search for reserves to increase the efficiency of means of transport is varied. To transport Muradkhanlinskaya petroleum, 150 kilometers of oil pipeline have been laid on the Kyurdamir-Ali-Bayramly section. In connection with that a large number of railroad tank-cars have been released from the transportation of petroleum and the work of the Ali-Bayramly and Kyurdamir stations has been eased. This also leads to a reduction of the loading of the Kyurdamir-Ali Bayramly railroad section.

Labor rivalry contributes well to the mobilization of efforts. The collectives of the Administration of Production and Technical Equipment Servicing and Complementation of "Azneft'" and the collective of the Baladzhary station, having studied their reserves and possibilities, concluded an agreement on competition with one another. Our administration pledged, in particular, to reduce the standards of downtime of cars during loading and unloading by 30 minutes on the average by increasing labor productivity and increasing the loading and unloading equipment utilization factor. It also has been decided to expand the front of operations, completely assure the timely and uninterrupted loading and unloading of cars on Saturday, Sunday and holidays, assure the preservation of rolling stock during the loading and unloading of cars, clean them completely after unloading and accomplish major repairs on two kilometers of sidings. It is proposed to improve the state of mechanisms and storage facilities, introduce an advanced technology of loading and unloading work and to help the railroads with materials and people in sanitary work.

The Baladzhar station workers pledged to inform customers earlier about the arrival of freight, assure the timely distribution, delivery and removal of cars from points of freight operations and the storage of goods, repair one kilometer of sidings in the course of a year and establish technical inspection of the good condition of rails.

In accelerating car turnover an important role is played by the technical condition of special-purpose sidings. The "Asneft'" system includes 12.5 kilometers of them. With the help of the collective of the Valadzhar district line 2 kilometers of sidings have been repaired, and 8 kilometers more require repair. Restoration work is being done there now.

"Azneft'," like other associations and enterprises which have railroad sidings, succeeds in repairing them with difficulty: materials (rails, ties, etc) are lacking, and there are no specialists for the restoration of sidings.

The question of solving this problem on the scale of the republic has become urgent. It must be thoroughly studied by the Azerbaijan Territorial Association "Promzheldortrans" of the Ministry of Railways. It is obliged to include in its plan and to remove for repair existing sidings, with subsequent take-over on its balance.

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